Vol. I

TRANSCRIPT OF EVIDENCE

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, [illegible]

No. 1, Original.

THE STATE OF GEORGIA, COMPLAINANT,

vs.

THE TENNESSEE COPPER COMPANY AND THE DUCKTOWN SULPHUR, COPPER & IRON COMPANY, LIMITED.

TESTIMONY ON MOTION TO ENTER A FINAL DECREE AGAINST THE DUCKTOWN SULPHUR, COPPER & IRON COMPANY, LIMITED.

MOTION FILED FEBRUARY 24, 1914.

SUPREME COURT OF THE UNITED STATES.

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a In the Supreme Court of the United States.

No. 1, Original.

THE STATE OF GEORGIA

v.

TENNESSEE COPPER COMPANY and DUCKTOWN SULPHUR, COPPER AND IRON COMPANY, LIMITED.

It is agreed between complainant and defendant Ducktown Sulphur, Copper and Iron Company, Limited, that in printing the record for the hearing of the motion of the State of Georgia to enter a final decree against said defendant, the Clerk shall omit the reproduction of all maps and drawings, but said original maps and drawings shall constitute a part of the record, and be considered by the Court as such.

This October 29th, 1914.

WARREN GRICE,
Attorney General of the State of Georgia.
J. A. FOWLER,
Attorney for Ducktown Sulphur, Copper and Iron Company, Ltd.

(Endorsed:) Supreme Court U. S. October Term, 1914. Term No. 1, Original. The State of Georgia vs. Tennessee Copper Company et al. Stipulation as to printing record. Filed November 18, 1914.

1 Supreme Court U. S., October Term, 1914.

Term No. 1, Original.

THE STATE OF GEORGIA, Complainant,

vs.

THE TENNESSEE COPPER COMPANY et al.

Evidence for the Complainant.

Filed September 14, 1914.

2 In the Supreme Court of the United States.

No. 1, Original. In Equity.

THE STATE OF GEORGIA, Plaintiff,
vs.
TENNESSEE COPPER COMPANY and DUCKTOWN SULPHUR, COPPER & IRON COMPANY, LIMITED, Defendants.

Agreement as to Taking of Proof.

It is hereby agreed that, commencing on August the 12th, 1914, and continuing from day to day, if necessary, until completed, the Plaintiff, the State of Georgia, may take the depositions of W. H. Shippen, —— Shippen, —— Vestel, —— Tremmell, John Rodgers, Asberry Henson, S. W. Henson, Geo. W. Henson, J. T. Deweese, R. E. Stalling, W. L. Worshem, and any other witnesses desired by the Plaintiff, at the Court House, in Blue Ridge, Georgia, before E. P. Kingsberry, a Georgia Court Reporter, commencing each day at 9:30 o'clock A. M.

That said depositions may be taken in short hand, transcribed, and when thus done, forwarded and filed. They may be read subject to exceptions for incompetency and ir-eelevancy only; formalities save as above being waived.

This July 8th 1914.

WARREN GRICE, *Att'y Gen.*,
By J. A. DRAKE, *Special Counsel*,
THE DUCKTOWN SULPHUR, COPPER & IRON CO., LD.,
By W. B. MILLER, *Att'y*.

3 No. 1. In Equity.

THE STATE OF GEORGIA,
vs.
THE TENNESSEE COPPER COMPANY & THE DUCKTOWN SULPHUR, COPPER & IRON CO.

It is hereby agreed and stipulated by and between counsel for The State of Georgia and The Ducktown Sulphur, Copper & Iron Company that all of the foregoing testimony taken before the commissioner, shall be, by the commissioner, certified to that he has correctly taken the statements of the various witnesses in shorthand, and has correctly transcribed the same from his notes.

It is further agreed that the testimony shall not be read over to, or signed by the separate witnesses. It is also further agreed that the commissioner may transmit the record of the testimony of the various witnesses, together with the exhibits to the testimony of the several witnesses by express, from Gainesville, Georgia, to the Clerk

of the Supreme Court of the United States, at Washington, D. C. not later than the 10th day of September, 1914.

WARREN GRICE,
J. A. DRAKE,
LAMAR HILL,
Counsel for The State of Georgia.
W. B. MILLER,
J. A. FOWLER,
Counsel for The Ducktown Sulphur, Copper & Iron Company.

4 In the Supreme Court of the United States.

No. 1, Original. In Equity.

THE STATE OF GEORGIA, Plaintiff,
v.
TENNESSEE COPPER COMPANY, and DUCKTOWN SULPHUR, COPPER & IRON COMPANY, LIMITED, Defendants.

Depositions of Geo. ~~W~~. G. Hedgcock and Others, Taken on Behalf of the Plaintiff, The State of Georgia, Before E. P. Kingsbery, Commissioner, Pursuant to Notice Hereto Annexed, at Blue Ridge, Georgia, Commencing August 12th, 1914, in the Presence of J. A. Drake and Lamar Hill, Representing the State of Georgia, and Gen. J. A. Fowler and Geo. G. Hyatt, Representing the Respondents.

5 The first witness for the State of Georgia, Dr. GEORGE ~~W~~. G. HEDGCOCK, having first been duly sworn by the Commissioner, testified as follows:

Direct examination.

By Mr. DRAKE:

Q. 1. Doctor, how old are you and where is your home?
A. Fifty years old, Takoma Park, Washington, D. C. My citizenship where I vote is in St. Louis, Missouri.
Q. 2. What is your profession?
A. My profession is pathologist, or might properly be called plant pathologist.
Q. 3. What degrees have you taken and in what schools?
A. Bachelor of Science at the University of Nebraska, the degree of Master of Arts in the State University of ~~New York~~, Degree of Doctor of Philosophy in Washington University in St. Louis.
Q. 4. What special studies have you made, if any, in——
A. Well, my University training was first, what training I took in the University was leading up directly to my present work. I have studied botany from practically all the best authorities, the

philosophy of plants, the ~~sitology~~ of plants, the diseases of plants, as well as systematic botany.

Q. 5. Have you made any study of ~~etimology~~?

A. I have not finished answering the other question yet, have just begun.

Q. 6. Well, go on.

A. That was my training in the universities proper, I took post graduate work then on diseases of plants, on ~~sitology~~ of plants, leading to the Master's Degree, and at St. Louis, I worked on diseases of plants, especially of wood, which lead to the Doctor's degree, and since then I have been a constant student in my work. I took my degree of,—I didn't give you the dates, do you want them?

Q. 7. No.

6 A. I entered the Government work, this special work I speak of.

Q. 8. What is your present employment and how long have you been in this service?

A. My title is pathologist. I am engaged in the investigation of pathology, in the study of tree diseases, especially at the present time.

Q. 9. Under the United States Government?

A. Yes sir, I am Assistant Chief to the division that I am in.

Q. 10. How long have you been there?

A. I have been in the Government service, in this class of work since 1899, that is, in the study of plant diseases, not in the forest division. In forest diseases I begun my study in St. Louis in the year 1902, but did not put in all my time at it. I continued there until 1907 when I was transferred to Washington, D. C., and entered wholly into the study of diseases of forests.

Q. 11. Since you have been transferred to Washington and into this forest service work,——

A. I am not in the forest service.

Q. 12. Well, in this study of forest diseases, where has that work carried you with respect to smelter injury?

A. Well, in my work I have traveled all over the western part of the United States, and a great deal of the eastern part. I can tell you the smelters that I have visited,—at Douglass, Arizona; the smelters I visited there; at Kennett, California, only one operating at Kennett when I was there; I visited that region, and at Anaconda. I spent three years studying there, 1910, 1911 and 1912; put in time there. In 1912, I visited the region around the smelters at Leadville, Colorado, and examined the trees; and I visited the region around Columbia Falls, Montana.

Q. 13. That has covered a period of how many years?

A. This work I made a specialty of studying smelters has covered a period since 1910. Of course, I visited this place, have not mentioned that, this past year.

Q. 14. Has that experience and work made you familiar

7 with the character of the regions around smelters?

A. It has.

Q. 15. What is the character of the region around smelting plants similar to the one at Ducktown?

A. The copper smelting plants throwing out smelter fumes usually adjacent to the smelters, there is a barren area practically destitute of vegitation. There may be a few plants, of course, here and there, but there is an area practically denuded as compared with other areas. This region depends upon the amount of fumes thrown out, and then beyond this region is a region of what we call acute injury, in which vegetation is not all killed out, where you find trees are injured more or less, dead and dying. During the summer time you will find trees with injured leaves in this region. This region is irregular, depending upon the air currents and contour of the country.

The next region is the one in which the leaves show a yellowing of the green, what we call a chronic condition, greenish yellow instead of healthy color. This is visible to the eye, and we call that the region of chronic injury. That extends out beyond the other regions, then still there is a region of injury which is not visible to the eye. In the first region there is a decided falling off in the growth of the trees, as shown by the rings. In the second there is also a falling off in the growth of the trees as compared with trees growing under healthy conditions. Then beyond that the invisible areas in which it is visible only in the leaf on the trees. You will find there a greater growth than in the other two cases, but in most trees, this falling off is present, if not all, and cuts off the life of the tree, and the only way it can be seen would be to cut into trees and take whole sections of them.

Q. 16. Could you take a small section, a three or four inch section out of a part of the tree, would that give you any idea?

A. No certain idea, because — the tree growing unequal, and if you removed some part of the tree, one side of the tree,—if you let in more light on a tree, it increases the growth on that side. It is necessary to have a whole section to make a certain estimated growth rate of the tree, to offer in evidence.

Q. 17. How far usually does the first zone of injury extend from the smelter?

A. It varies greatly, some of them I have examined, are smaller than others. From the larger ones it goes out a greater distance, in the larger smelters the acute injury may reach twenty two miles on certain species of trees. I would say ten to twenty two miles from the largest smelters, varying down to from six to eleven miles with the smaller ones.

Q. 18. How far in that case would be the outer zone of injury?

A. I have not found it exactly, I have found it a considerable distance, I didn't consider it of enough importance to spend my time on that zone because the injury would be less. I have spent most of my time in the other two zones.

Q. 19. What were they?

A. Acute and Chronic.

Q. 20. Getting down now to this Ducktown Copper Company's plant, when did you first visit that company?

A. Last year, and in the first week of September, 1913.

Q. 21. When have you visited again in this section?

A. I came here last Friday noon, and have been around in the region since.

Q. 22. When did your investigation begin and where did that investigation carry you?

A. I came in northwest over the Louisville & Nashville road to Ducktown. There we took a rig and drove out and walked a good deal of the distance and examined trees on the sides of the road down the Ocoee River and went across down the Ocoee River and went across to a station on the Louisville & Nashville Railroad.

Q. 23. Where else did you go on that trip?

9 A. That was the first part of the trip. We returned to Copperhill and took a horse and buggy, and made three or four trips. One trip around the Isabella section, another trip out southeast into Georgia a distance of five miles, southwest of Copperhill. Another trip northeast to the mountain, rather east, I don't know the name of it.

Q. 24. In Tennessee?

A. Yes sir, toward North Carolina. I took two trips south of Copperhill into Georgia a distance of about four miles.

Q. 25. Do you remember any of the names of the places in Georgia?

A. I did not take the names of any points we went that year I did not expect to testify in smelter cases at all. Simply working to find out the smelter effects and it had no reference to any suit.

Q. 26. Well, now, in your investigations this year, last Friday, where did you first come to, and where did those trips carry you, if you made such trips?

A. I took an automobile from this point last Friday noon and drove down from here, Blue Ridge, to Copperhill. Around by the Isabella smelters, looking over the region and selecting some specimens. The second day, Saturday, I took an automobile from here, and went to Epworth, with that gentleman here, J. P. Vestal and his son, who drove the automobile for us. I was accompanied by J. P. Vestal and his son, Mr. Clarke of the Forest Service, and Mr. Johnson of the Forest Service. We went to Medola and Barnes Mountain, and from there to Grannyo Marr Mountain, and at several points we collected specimens and investigated trees and plant injury by sulphur fumes. On the first trip we went south to Ellijay, and then east from there and returned. That was on Monday. On that trip I was accompanied by Mr. Clarke and Mr. Johnson and Mr. F. E. Shippen.

Q. 27. From these various trips, north, south, east and west from these plants, where would you say was the center of this injured zone, where would the center be?

A. It would be near to the Ducktown Copper Company,

10 probably slightly to the south of it. It would be near to it.

Q. 28. What position does the Tennessee Copper Company's smelter occupy as to the zone?

A. As to the zone of barren region and acute injury the Tennes-

see Copper Company lies to the south side, is not in the center, I would say a mile and a half to the south of the center, probably two miles. That is merely an estimate by eye. I have made no survey.

Q. 29. And by traveling over it?

A. Yes sir, and by eye.

Q. 30. Now, what is the condition of those hills and the country generally around the Ducktown plant as to vegetation?

A. In closer you will find, as you go out, you will find as you get away from Ducktown to a distance of a mile the grass begins to grow, and when you get beyond that further, you will find certain other vegetation, confined to Sage grass, and beyond that you will find an increase of trees, the further you go. Of course, these trees and vegetation are injured more or less.

Q. 31. State whether or not there is a gradual increase in vegetation as you go from,——

A. A gradual increase as you go in any direction from the Ducktown smelter.

Q. 32. I believe you stated that you saw these two plants, the Tennessee Copper Company and the Ducktown Copper Company, the appearance and construction of the stacks, did you not?

A. I did. I didn't observe them carefully, but I noticed they had different stacks, one larger than the other, if I remember right.

Q. 33. What would be the relative carrying power of the Ducktown smoke, as to that from the Tennessee Copper Company's stack?

A. In my opinion the Tennessee Copper Company's stack would carry the smoke further than the Ducktown Copper Company.

Q. 34. What effect would the Ducktown smoke have as regards the distance?

11 A. How is that?

Q. 35. As to distance, what effect,——

A. In my opinion, the Tennessee smoke is more apt to go over the mountains to the south, than that of the Ducktown Company.

Q. 36. And the effect of the Ducktown smoke would be observed at what distance, from your observation?

A. It would pass out within a radius of from six to fifteen miles from Ducktown.

Q. 37. What would be the effect of smoke from the Tennessee Copper Company's plant, do you think?

A. It might pass out as far as twenty miles.

Q. 38. Suppose that the winds were blowing from the north and northwest,——

A. I am speaking in terms of injury, not in terms of smoke carrying.

Q. 39. That is what I mean,—Suppose the wind is blowing from the north or northwest, and the smoke is boiling out of the top of the stack of the Ducktown Copper Company's plant, and the wind strikes that smoke and drives it down toward Georgia, and the Tennessee Company's stack we will say is two hundred,—one hundred and ninety feet higher than the point where the smoke comes out of the Ducktown Company's stack would or not those smokes

mingle and mix, that of the Ducktown Company and that of the Tennessee Copper Company, if not, what would be the effect?

A. They would mingle to some extent, but the effect would be this, the smoke coming out of the stack is intensely heated, both of them, 2000 degrees centrigrade, come out hot and would be much lighter than the air, and would be thrown up high, When the wind is not blowing to any extent. That being true, the Tennessee Copper Company's stack being higher, wouldn't cool so quick, take it the distance of the stack to cool that further up. Consequently you would find that one smelter smoke would pass under the other. They would probably be in or near the other.

Q. 40. Which would pass under and which would pass on top?

12 A. The Ducktown Company's smoke would pass below the other on top.

Q. 41. Where would it affect the State of Georgia most?

A. It would strike lower down.

Q. 42. Where would it affect Georgia?

A. The effect would be greater the first few miles, affect it,——

Q. 43. Affect it more or less than the Tennessee Company?

A. It would affect it more on the first slopes.

Q. 44. What distance would that injury carry?

A. From my observations from the smoke columns I have seen I would judge it would carry out six or eight or ten miles, depending on conditions, it might go further.

Q. 45. You went last Saturday, you say, into the region,——

A. I am speaking of damage, not distance it might go, injured that far.

Q. 46. You said you went into Fannin County, Georgia, south of these plants last Saturday, into and around Fighting Town Creek, did you?

A. Yes sir, I didn't recognize it as Fighting Town Creek. I recognized Granny Marr Mountain. I was told Fighting Town Creek was down there.

Q. 47. Did you cross such a creek?

A. I don't know whether I crossed such a creek or not. I didn't pay any attention to that, just the mountains.

Q. 48. How far south do you judge you were from these plants?

A. I could tell if I had a map. (Witness is handed a map.) Which point do you want to know?

Q. 49. The furtherest point you went last Saturday in Georgia, if you can find it?

A. (Pointing to map.) Here is Blue Ridge, here is Copperhill here is Ducktown, I think Mule Top was the furthest, let's see (Looking at map) about ten miles from Ducktown—from Isabella—did you want to know from Copperhill—be about seven and one half miles from Copperhill, is the furtherest point.

13 Q. 50. You say you were at Epworth that day?

A. Yes sir.

Q. 51. To go from Epworth, I will ask you if you didn't take a road leading southwest across,——

A. We went through Medola.

Q. 52. I will ask you if this (Indicating) is Fighting Town Creek, you went from Epworth along that road, and that would carry you across Fighting Town Creek.

A. Yes sir.

Q. 53. Do you remember Higdon Creek?

A. I remember crossing a creek, I don't remember the name.

Q. 54. What mountains did you go on top of?

A. Granny Marr, is further north.

Q. 55. When you was on top of those mountains, could you see the Ducktown Company's plant or not?

A. On Barnes Mountain, from Granny Marr, I could see the Ducktown plant. We had field glasses with us.

Q. 56. Could you see the stack of the plant?

A. Yes sir, could see bare top of the stack of both works from Barnes Mountain, and the smoke belching from it, and from Granny Marr, it showed one side of the works, the angle would be such.

Q. 57. You say you saw the smoke belching from that stack?

A. Yes sir, from both points.

Q. 58. In what quantity did it seem to be?

A. Considerable volume, large volume of smoke being discharged.

Q. 59. That day, which direction was the wind from?

A. At the time I observed it it was blowing toward Tennessee across the mountain of Tennessee.

Q. 60. It was not blowing toward you?

A. No sir.

14 Q. 61. On that trip, did you observe any smoke injury, if so, at what point?

A. On that trip I observed smoke injury near Epworth, and extending at various points along the road from Epworth to Madola and beyond Madola at a number of points between there and Barnes Mountain, and on Barnes Mountain abundant injury, and I took the field glasses and looked at Mule Top and could see many trees browned on the slope of Mule Top Mountain. Returning from there to the Granny Marr Mountain, I saw injury in several places.

Q. 62. Did the injury seem to be recent?

A. In some places it was, and in some places, it had probably occurred two months ago.

Q. 63. Was there much or little injury through that section?

A. Much injury in places, not uniform.

Q. 64. Did you take any samples on that trip?

A. I did.

Q. 65. Do you have them with you?

A. I have. The F. P. 15728 is also called No. 1 in this exhibit. F. P. 15701 is also No. 17. I am about to offer F. P. 15697, which is No. 20 in this exhibit I am about to offer.

Q. 66. Please take those up one at a time and give the numbers and the name of the plant, the injury, what caused the injury, and the location where you got those samples?

A. I would say that these were collected, and have two numbers. The first F. P., is the Government number, and the Government

collection have duplicate specimens of everything under the number. The second number is the number of the specimen which will be the number of the Exhibit itself. That is the number I will use, 1, 2, 3, etc.

Q. 67. Now begin*g* with No. 1 and tell where you found that?

A. No. 1 is an exhibit, or specimen of leaves, what is commonly known as the black jack oak. It contains smelter injury, the red is due to smelter fumes. There is one or two places on the leaves where there is a slight greenish color, but the red-ening is due to smelter fumes. No fungii on this leaf. I put it under a compound microscope. The specimen is known scientifically as Quercus Marylandica. It was collected on the slope of Barnes Mountain in Fannin County, Georgia, on August 8th, 1914, by me and identified by me.

Exhibit No. 2 was taken the same day and in the same manner. I do not know the common name here, but the scientific name is Quercus Rubra. It is injured by smelter fumes and was taken on Barnes Mountain in Fannin County, Georgia, on August 8th, 1914, and identified by me as Exhibit No. 2.

No. 3 is smelter injury to the leaves of what is known elsewhere and locally as bear, or scrub oak, Quercus Illicifolia. This was gotten along the ridge near the top of Barnes Mountain, collected on August 8th, 1914, and identified by me as Exhibit No. 3.

Smelter injury to the leaves of black oak sprout, Quercus Velutina, found on the slope of Barnes Mountain and collected by me in Fannin County, Georgia, on August 8th, 1914, tendered as Exhibit No. 4. This shows a slight shade darker in color than the preceding. The next is smelter injury to the leaves of the pig nut hickory, Hicoria Glabra, found on the slopes of Barnes Mountain, in Fannin County, Georgia, on August 8th, 1914, collected by me and tendered as Exhibit No. 5.

Leaves of the Scarlet Oak, Quercus Coccines, injured by smelter fumes, collected on the slope of Barnes Mountain, in Fannin County, Georgia, on August 8th, 1914, collected by me and tendered as Exhibit No. 6.

Short leaf pine, Pinus Echinata, injured by smelter fumes found on and near the Barnes Mountain, collected on Barnes Mountain in Fannin County, Georgia, August 8th, 1914, by me, and tendered as Exhibit No. 7.

The leaves of persimmon, Diospyros Virginiana, occasional injury on the leaves, in the region near Barnes Mountain, collected on Barnes Mountain, in Fannin County, Georgia, on August 8th, 1914, tendered by me as Exhibit No. 8. Injured by smelter smoke.

Injury by smelter smoke on the leaves of the mountain laurel, Kalmia Latifolia, common on Barnes Mountain and in that vicinity in Fannin County, Georgia, collected on Barnes Mountain on August 8th, 1914, by me and tendered as Exhibit No. 9.

Smelter injury to the leaves of wild honeysuckle, Azalia Nudiflora, very common on Barnes Mountain and vicinity, collected in Fannin County, on Barnes Mountain, on August 8th, 1914, and tendered by me as Exhibit No. 10.

Injury by smelter fumes on the leaves of the chestnut, Castenea Dentata, common expecially shaded trees in and near Granny Marr Mountain, in Fannin County, Georgia, collected on Granny Marr Mountain on August 8th, 1914, by me and tendered as Exhibit No. 11.

Injury by smelter fumes on the leaves of the chestnut, Castenea Dentata, in and near Granny Marr Mountain, Fannin County, Georgia, collected by me on Granny Marr Mountain on August 8th, 1914. This shows the form of injury that occurs in sunlight, which is redder than the form that occurs in the shade. I tender that as Exhibit No. 12.

Injury by smelter fumes on the leaves of the Virginia Creeper, Parthenocissis Quinquefolia, the form that occurs in the shade, on the leaves of this plant on Granny Marr Mountain, collect- on Granny Marr Mountain in Fannin County, Georgia, on August 8th, 1914, and tendered by me as Exhibit No. 13.

Injury by smelter fumes on the wild honeysuckle, Azalia Nudiflora, common on and near Granny Marr Mountain in Fannin County, Georgia, collected by me on Granny Marr Mountain, on August 8th, 1914, and tendered as Exhibit No. 14.

Injury by sulphur fumes on the leaves of the white ash, Fraxinus Americana, the form occurring on shaded leaves on seedling trees. This was collected on Granny Marr Mountain on August 8th, 1914, by me, and tendered as Exhibit No. 15.

Injury by smelter fumes to one of the golden rod, Solida-o
17 Serotina, species uncertain, this injury is common on Granny Marr Mountain, collected on Granny Marr Mountain, Fannin County, Georgia, by me on August 8th, 1914, and tendered as Exhibit No. 16.

Injury by smelter fumes on the leaves of the short leaf pine, Pinus echinata common on, in and near Granny Marr Mountain. The older leaves have been previously injured and shed off. This accounts for the *the* shortness of the leaves. The leaves having been checked in growth by smelter fumes, collected on Granny Marr Mountain on August 8th, 1914. This injury is common in the vicinity, as well as on the mountain, tendered by me as Exhibit No. 17.

Injury by smelter fumes on the leaves of the sumac Rhus Copallina, frequent on and in the vicinity of Granny Marr Mountain, collected by me on Granny Marr Mountain, on August 8th, 1914, and tendered as Exhibit No. 18.

Injury by smelter fumes to the leaves of the fox grape, Vitis Labrusca, species uncertain, this is found occasionally or frequently, on Granny Marr Mountain and vicinity, in Fannin County, Georgia, collected on Granny Marr Mountain by me on August 8th, 1914, and filed as Exhibit No. 19.

Injury by smelter fumes on the leaves of the chestnut, Castenea Dentata, common on and near Granny Marr Mountain in Fannin County, Georgia, and collected by me on Granny Marr Mountain on August 8th, 1914, and tendered as Exhibit No. 20.

Smelter injury on the leaves of the chestnut oak, Quercus Prinus, frequent on Granny Marr Mountain and in that vicinity; collected

by me in Fannin county, Georgia, on Granny Marr Mountain on August 8th, 1914, and tendered as Exhibit No. 21.

Injury by smelter fumes to the leaves of the black jack oak, Quercus Marylandica, common on Granny Marr Mountain, and in that vicinity, in Fannin County, Georgia, collected by me on Granny Marr Mountain on August 8th, 1914, and tendered as Exhibit No. 22.

Injury by smelter fumes on the leaves of the sassafras,
18 Sassafras Sassafras, common on and near Granny Marr Moun-
in Fannin County, Georgia, and collected by me on August 8th, 1914, on Granny Marr Mountain, and tendered as Exhibit No. 23.

Injury by smelter fumes to the leaves of the scarlet oak, Quercus Coccines, common and near Granny Marr Mountain in Fannin County, Georgia, collected by me *me* on Granny Marr Mountain, on August 8th, 1914, and tendered as Exhibit No. 24.

Injury by smelter fumes on the leaves of the scaley poplar, Liriodendron Tulipifera, common on and near Granny Marr Mountain in Fannin County, Georgia, collected by me on August 8th, 1914, tendered as Exhibit No. 25.

Smelter injury to the leaves of the white oak, Quercus Alba, common on and near Granny Marr Mountain, in Fannin County, Georgia, collected by me on Granny Marr Mountain on August 8th, 1914, tendered as Exhibit No. 26.

The leaves of the red maple, Acer Rubrum, injured by smelter fumes, which are very common along the road from Copperhill, Tennessee, to Blue Ridge, Georgia, near Epworth, Georgia, in Fannin County, collected by me on August 7th, 1914, and tendered as Exhibit No. 27.

Injury by smelter fumes to the leaves of the scarlet oak, Quercus Coccinea, very common near Epworth, Georgia, along the road from Copperhill to Blue Ridge, the wagon road, collected by me near Epworth, Georgia on August 7th, 1914. This shows the form of smelter injury. This has been weathered by the wind, and I tender it as Exhibit No. 28.

Injury by smelter fumes on leaves of the black jack oak, Quercus Marylandica, occurring along the east of Epworth and Copperhill and Blue Ridge wagon road, collected by me near Epworth on August 7th, 1914, and I tender it *was* Exhibit No. 29. This specimen shows some weathering, as the previous one.

Injury by smelter fumes to the leaf of the post oak, Quercus Minor,
very common near Epworth, Fannin County, Georgia, along
19 the Copperhill-Blue Ridge Wagon road, collected by me on August 7th, 1914, tendered as Exhibit No. 30. This specimen also shows weathering, much broken.

Injury by smelter to leaves of the spanish oak, Quercus Digitata, common east of Epworth, Fannin County Georgia, near the Copperhill and Blue Ridge wagon road, collected by me on August 7th, 1914, near Epworth, Georgia, tendered as Exhibit No. 31.

Injury by smelter fumes to the leaves of the blackberry, Rubus, common along the Copperhill and Blue Ridge wagon road, collected by me in the garden of Tom Angle, in Fannin County, Georgia, on

August 7th, 1914, tendered as Exhibit No. 32. It was collected by me.

Slight injury by smelter fumes to the scarlet oak, Quercus Coccinea, collected near the Copperhill and Blue Ridge wagon road on August 7th, 1914, by me, and tendered as Exhibit No. 33.

Injury by sulphur fumes to the leaves of the scarlet oak, Quercus Coccinea, common along the wagon road about one mile west of Madola Georgia, and collected by me on August 7th, 1914, and tendered as Exhibit No. 34.

Injury by sulphur fumes to the leaves of the scrub pine, Pinus Virginiana, common near the wagon road about one mile west of Madola, in Fannin County, Georgia, collected by me on August 8th, 1914, and tendered as Exhibit No. 35.

Injury by smelter fumes on leaves of the short leaf pine, Pinus Echinata, along the wagon road one mile west of Madola, collected by me on August 8th, 1914, and filed as Exhibit No. 36.

Injury by smelter fumes to the leaves of the black jack oak, Quercus Marylandica, old and somewhat weathered, but not broken, common along the road west of Madola, in Fannin County, Georgia, collected in this locality on August 8th, 1914, and tendered as Exhibit No. 37.

Injury by smelter fumes to the leaves of cultivated cowpeas, near Madola in Fannin County, Georgia, collected by me a short distance west of Madola, Georgia, on August 8th, 1914, and tendered as Exhibit No. 38.

Q. 68. What would be the effect of such injury as you have just exhibited and described, and that you saw on that trip, on the vitality and life of a forest?

A. The most severe injury I saw on these trips, on the leaves, they were wholly dead. I found many in that condition, and it would result, if repeated in two years, on the same tree, in the death of the twigs, and if injured three years it would result in the death of the whole tree. On Cowpeas and such plants it is liable to kill the plant in one season. Beans and cowpeas being susceptible to the smoke.

Q. 69. Even one application of such injury as you have exhibited, what would be the effect on a crop of cowpeas?

A. A strong exposure to smelter smoke might injure the crop so bad that it would be worthless for producing anything.

Q. 70. What effect would it have upon the peas?

A. If it is in blossom, it would destroy them, but as it blossoms for some time, it might not affect the whole crop.

Q. 71. Please describe what function the pollen in any plant performs in the life of the plant?

A. They are sexual in effect, have male and female organs, that is the higher plants, such as apple trees, and it is necessary to fertilize the female part so as to produce the seed, and it is necessary that this pollen shall fall upon the tube or stigma and going down from this tube or stigma into the ovary and unites its cell content with what is

known as the egg cell part of the plant. There can be no such formation unless this is done.

Q. 72. What effect would smoke have on the pollen of plants?

A. Smoke fumes, if not greatly diluted, would kill the pollen if it was in contact for any length of time. Much less dilution of smoke will kill pollen than will kill leaves.

Q. 73. How then might you destroy a forest, how many ways?

A. The first and most violent way is to kill off the leaves, thereby destroying the forest. The leaves are the breathing part of
21 the trees as well as its stomach, affects the digestion. If the leaves of the tree are affected that way it weakens the tree so that it would bring about the death of the tree. Then another way, in case the tree was struck at the time it was in blossom, it would affect the bloom or seed of the tree, and in that way kill the reproduction. The third way, would be the repeated application of the smoke until finally the tree would die.

Q. 74. So, if a tree is struck by these fumes, when the bloom or pollen is on, the seed would be destroyed, that would be the effect, would it not?

A. If the pollen was struck, all the pollen open on that day would be killed, but many trees produce pollen from day to day and the entire crop might not be destroyed. Of course, there would be a reduction in the amount.

Q. 75. How does the hemlock reproduce?

A. It produces the same way, by the falling of the pollen upon the female tube.

Q. 75. They reproduce by seed?

A. Yes sir.

Q. 77. What did you observe in your trip through North Georgia on this last year, and this year?

A. Practically no production of seed in the forest where the acute smelter injury was taking place. By acute smelter injury I mean this form just submitted in evidence. I am not keeping,—I am not submitting any chronic specimens in evidence.

Q. 78. I believe you have stated that all the specimens you have exhibited here, are exhibits of injury from smelter fumes, sulphur dioxide fumes?

A. In my judgment they are.

Q. 79. I hand you some exhibits,—What caused that?

A. Exhibit No. F. P. 15017.

Q. 80. Make that Exhibit A, please to your deposition?

A. All right.

22 Q. 81. State whether or not that is the same specimen that was presented to Mr. R. A. Shiflett?

A. Yes sir, the specimen that was, presented to him as F. P. 15017. It is an oak, identified by him as a white oak. If I remember correctly.

Q. 82. Do you know whether or not he stated that was smoke injury?

A. I cannot say as to what he stated.

Q. 83. What is the injury to these leaves, if you know?

A. The injury to this is due to poor circulation. This was collected on the mall near the Agricultural Building in Washington, D. C., on October 10th, 1913, from a limb in which there was poor circulation. This form of death is due to poor circulation.

Q. 84. Is that caused by smoke injury?

A. It is not. It has not the color of smoke injury, darker in color. It has yellow lines along the vein which do not occur in smoke injury. In actual smoke injury, we do not have that. In smoke injury they may turn brown and resemble this to some extent, but it is much more definite.

Q. 85. I tender you Exhibit F. P. 8485, which please file as Exhibit B to your deposition and state whether or not that is the same sample that was presented to Mr. Shiflett a little while ago?

A. This was the sample that was present- to Mr. Shiflett as Exhibit F. P. 8485, it is a specimen of the valley oak, Quercus Lobata.

Q. 86. Where is that specimen from, where was it collected from, and what is the matter with it?

A. This was collected at Kennett, California, in July 1913, by the Secretary of the Farmer's Protective Association and sent to me at Washington, D. C., for determination. I have previously visited this locality and collected injured shrubbery.

Q. 87. Is this smoke injury?

A. Yes, sir, smelter injury, due to smelter fumes. I tender this as Exhibit B.

Q. 88. I tender you F. P. 15029, which please file as Exhibit C to your deposition, and state whether or not this sample was presented to Mr. Shiflett a little while ago?

23

A. This specimen was presented to Mr. Shiflett, F. P. 15029 and a specimen of the black jack oak, Quercus Marylandica, and this specimen has been injured by dry weather. It is so far from the smelters, it could hardly be caused by smelter fumes, collected near Austrell, Tennessee, on the 22nd of September, 1913, by me on the west slope of the mountain near this station.

Q. 89. I present to you F. P. 8740, which please file as Exhibit D to your deposition, and say if this specimen was presented to Mr. Shiflett?

A. This specimen was presented to Mr. Shiflett as F. P. 8740.

Q. 90. Please state what it is and where you collected it?

A. It is a specimen known as Amujha Fruticosa, one of the pulpse family, which might be called the pea family, and it is injured by smelter fumes.

Q. 91. Where did you get it?

A. Collected it along the Ocoee River about five miles west of Ducktown.

Q. 92. Is that plant known as the locust?

A. No sir, it is not a locust.

Q. 93. I will ask you whether or not it was termed by Mr. Shiflett as the black locust in his deposition?

A. If I remember right, he called it a locust, I will not try to remember what he said. I file it as Exhibit D.

Q. 94. I present you F. P. 8724, which I ask you to file as Exhibit E to your deposition and state what that is and what is the matter with it?

A. This specimen presented is F. P. 8724, and is the leaves of the maple, Acer Rubrum, these leaves are primarily injured by sulphur smoke, and have some fall discoloration combined with it.

Q. 95. Where did you say they came from?

24 A. Collected along the Ocoee River about three miles west of Ducktown on the 23rd of September, 1913, by me and I file them as Exhibit E.

Q. 96. I present to you F. P. 15014, which please file as Exhibit F to your deposition, state what it is and where you got it, and what is the matter with it?

A. It is a specimen handed to Mr. Shiflett, F. P. 15014, and is a specimen of the red oak, the leaves of the red oak, Quercus Rubra, it is injured like the previous one, premature fall discoloration is taking place. These were collected on the lower limbs of the red oak along 14th Street west of the Agricultural Building in Washington, D. C., on October 8th, 1913. This differs from smelter smoke from the fact that you have red spots with yellowing all around. Acute injury from smelter smoke, you have a pink-reddish color. There was injury from smelter smoke such as I have submitted.

Q. 97. Would you say the forest through which you passed last Friday and Saturday in Fannin County, Georgia, is in a normal state of health, if not, to what do you attribute its condition?

A. If by normal, you mean good growing condition, I would say no.

Q. 98. That is what I mean, so go on and answer fully.

A. You want to know why, because there is some dead and dying trees in that area,—more dead and dying trees in that area than I would expect to find in ordinary healthy forests in the first place; and in the second place, I found much red discoloration, red discoloration of the oak and pine, which is not found elsewhere outside of the smelter zone.

Q. 99. Taking its proximity to the two smelters of the two companies, what would you attribute that condition to?

A. How is that?

Q. 100. What would you attribute that condition of the forest there to?

A. The effect of smelter fumes.

Q. 101. In that particular locality, from your actual ob-

25 servation of those plants, from those two furnaces, you studied and the view of them through your field glasses, and from the countour of the country and the heights of the stacks, and your knowledge of the actual smoke,—the action of smoke in this country, to which plant would you attribute the damage in that locality?

A. I would attribute the greater part to the Ducktown plant and

a minor part to the Copperhill plant, until you get high up on the mountain, when you get to the top of the mountain it would be hard to say, on the high mountains.

Q. 102. I believe, Doctor, you have already explained why you would draw this conclusion, but if you have not, state why you draw those conclusions?

A. From my observations last year that I made of the smoke columns from the two smelters, I observed the height and direction of the two columns, the direction which they were going, and as to how each struck the hills, and I noticed that the Ducktown column usually struck the hills at a lower altitude than the one from the other plant.

Q. 103. You also could see by actual observation, could you not, that company's stack was lower than the Tennessee Copper Company's stack?

A. Yes sir, it is built lower, very plain to the eye. I didn't make any geometrical measurements of it, but it is lower.

Q. 104. In the distribution or carrying of this smoke, what channels do they usually follow?

A. They usually follow the same channel the air passes through in passing through the mountain ranges.

Q. 105. Would that be uniform or zigzag?

A. It is bound to follow the lower portion between the high peaks. I have known it in the region of Anaconda to travel in a semicircle, travel around the canyon and come out around the point of the mountain in a semicircle.

Q. 106. What is the effect on smoke and gases of this
26 character when it strikes a mountain or hill, what effect does it have?

A. How is that?

Q. 107. What effect on this smoke — coming in contact with mountains have upon it, would it diffuse those smokes?

A. When smoke strikes the earth it diffuses there, take the curvature of the mountains and be diffused to some extent, especially if it is a bright sunshiny day.

Q. 108. Would the striking of a hill entirely diffuse the smoke or would it cause it to change its course and go further on, would it have that effect?

A. I have seen the smoke strike the Big Frog Mountain on the east side and seem to follow the mountain around, going south of it and passing through the lower region. The smoke following around the side of the mountain is not due to the fact that the wind is blowing that direction, changing its course, but due to the suction in the valley beyond.

Q. 109. After reaching its proper altitude in respect to its specific gravity, if it strikes a mountain, it wouldn't have a tendency to rise further and would deflect around the mountain?

A. It wouldn't pass over the mountain unless the wind was blowing right over it. Such things sometimes happen but not frequently. Sometimes you find the smoke rising right up, and in that case the

smoke will go up and pass right over like a storm cloud, that is the way storm clouds form, like warm air in a rain cloud.

Q. 110. Do you know about the effect of these smokes and gases holding together, under different conditions of atmosphere and carrying radious of these smokes under different conditions—what would be the effect under different atmospheric conditions as to the carrying and extent and range of the injury?

A. I am afraid you are getting a little into chemistry, I don't qualify as an expert on chemistry.

27 Q. 111. You have not observed them sufficiently from actual observation?

A. From the visible part of the smoke I can speak, but I cannot speak as to the invisible.

Q. 112. From the visible—what you have seen.

A. Now repeat your question.

Q. 113. How far can visual smoke go without diffusing or becoming invisible?

A. It immediately begins to diffuse, more or less.

Q. 114. How far can you see it?

A. It duffuses some immediately and after it goes out for a distance from the stack, there is more diffusion and the further it goes the more it diffuses.

Q. 115. But would it always be uniform?

A. No.

Q. 116. Do you know—under certain conditions of the atmosphere, wouldn't it carry a long way before it would break up?

A. I have seen it carry twenty five miles, and when it got twenty five miles away, it would strike the mountains and it was very much diffused.

Q. 117. You could see that with the natural eye?

A. That was at Anaconda, Montana.

Q. 118. Will you please describe the effects of these sulphur dioxide fumes, what effect it would have on a crop of growing wheat or any other grain, or corn?

A. On corn, wheat, oats, and grain, occurs what is known as a bleaching process, the leaves whiten.

Q. 119. What would be the effect if smoke fell on it when in blossom?

A. It would kiil the pollen that was formed at that time. A wheat crop does not all pollenate the same day. It would simply kill all present at the time and not injure the whole crop.

Q. 120. Would that or not tend to reduce the yield?

A. It would.

28 Q. 121. What about it if it strikes corn in tassel, or shuck?

A. It would injure it as far as the pollen was out, also the silk would blacken, a red color.

Q. 122. Would it or not reduce the yield in corn?

A. It certainly would.

Q. 123. Do you know by actual observation what effect it would have on the ear of corn at gathering time?

A. Well, the ear of corn has a silk running down to each grain.

That silk is a tube for the organ, and the pollen must fall on each silk to get down in the grain and fertilize it to make the corn, and there would be as many of those silks as were killed on that day. It would produce a gap, be lacking that many grains of corn on each ear. The effect would be similar to a drought.

Q. 124. Well, say it didn't entirely kill the silk, the power to fertilize the silk, but should partly kill it, would or not it partly kill it and make the corn yield a smaller amount?

A. In case the corn was injured there would be no grain there.

Q. 125. You mean each individual grain?

A. Yes, sir, simply have an ear with part of the grains there.

Q. 126. What would be the effect on a field of corn after the grain was already fertilized, would it or not have a tendency to make the grain light and chaffy?

A. You would have the effect of a light ear. It would be the same in wheat or oats.

Q. 127. I asked you about the hemlock, didn't I, tell about the hemlock, what is the effect? Is it very susceptible or not susceptible to sulphur dioxide fumes?

A. It is one of the susceptible trees, the most susceptible of the conifers, the hemlock and firs.

Q. 128. What about the locust trees, is it susceptible to smoke injury?

29 A. It is less susceptible than most of the deciduous trees, fairly resistant in the acute zone, I have not studied the lessening of the growth rings in the chronic zone of injury.

Q. 129. Have you been through the forests of Tennessee?

A. I have at several points.

Q. 130. Do you know what is causing the death of chestnut trees in that State?

A. In Eastern Tennessee and Western North Carolina, they have a serious disease, funguous armillaria mellea, which attacks the roots of the chestnut and injures them, and spreads from tree to tree through the roots. This funguous gradually kills the root system of the tree and gradually shuts off the circulation, causing the spike top of trees, and finally causes the death of the whole tree. This disease is being studied by William H. Long, of my office. He is the man who is working under me. I have examined with him this disease and knows its effect personally.

Q. 131. Is that what you attribute the death of the chestnut in this country?

A. Yes, sir, I do.

Q. 132. That is,——

By COUNSEL FOR DEFENDANT: He didn't state that, he said in that section.

A. I only speak of the sections I know of, I don't know of the other sections.

Q. 133. So it is not a fact that nobody knows what is killing those chestnuts?

A. Not in those localities I have visited.

Q. 134. It is not a fact that the borers are killing them?

A. The borers might work on them, I am not — entomologist.

Q. 135. They are not working in the roots?

A. No, sir. They may work in the bark, but not in the roots, the ones I know of.

Q. 136. I will ask you if it is not possible for one cause to produce the death in Tennessee and entirely another cause to produce
30 death down in North Georgia?

A. Yes, sir, the conditions are very different. It is rarely you ever find conditions in two different states identical.

Q. 137. Now, if there is anything further that I have interrupted you and kept you from explaining, state about it?

A. The only observation I might make was the lack of conifers, I am told by old residents that conifers were once abundant in that section, and now I find very few.

Q. 138. And among that variety is the hemlock?

A. Yes, sir, and pine.

Q. 139. And they are all gone from your observation, are they?

A. There are some pines, but greatly reduced in the acute zone of injury as to what they are outside.

Q. 140. The chestnuts that you found injured up here in Fannin County, Georgia, was it the same injury you found in Tennessee, where you have just described?

A. It is not, I have not found the disease in this section that was found up there.

Q. 141. What is the cause of injury to the chestnut trees in Fannin County, Georgia, that you — last Friday and Saturday?

A. So far as I observed, it has been smelter injury, and been no other.

Cross-examination.

By Mr. FOWLER:

Q. 1. When was it you made your trip out west and examined around the Anaconda furnaces?

A. I made one trip in 1910, the summer of 1910, and the second trip in 1911, and the third trip in 1912.

Q. 2. What is the capacity of those furnaces?

A. I am not a smelter expert.

Q. 3. It is a very large one?

A. I have just read about it in the Hand Book.

Q. 4. It is a large furnace?

A. I don't know anything about it, except the smelter is rated as the largest smelter in the country, that is all I know.

31 Q. 5. Has it a high stack?

A. It has.

Q. 6. Do you know how high the stack is?

A. I don't remember. I think it is higher than the Copperhill stack, I judge by eye.

Q. 7. Do you know whether or not they have any acid plants at all?

A. So far as I know they have nothing at all that could be called an acid plant, they have some kind of process where they take out

some acid. As I said, I don't know, I cannot qualify as a mining expert. I am a pathologist.

Q. 8. What is the first radius of acute injury of that furnace?

A. Ten to twenty miles on certain species of trees.

Q. 9. And that is the largest furnace in the United States?

A. Yes, sir.

Q. 10. Probably in the world, is it not?

A. I don't know, it is rated as the largest.

Q. 11. It does not eliminate any material part of the acid?

A. I don't know anything about it, I have not studied the chemical side.

Q. 12. You have had some understanding about whether it was or not?

By COUNSEL FOR PLAINTIFF: We except to the question as the witness does not know.

Overruled. Appeal prayed and granted.

Q. 13. Did you have some understanding as to what they eliminated?

A. Only from hearsay.

Q. 14. What did you understand about that?

A. I don't remember what that was now.

Q. 15. When you investigate a forest, don't you undertake to determine the cause of the injury?

A. Not the chemistry part of it, I do not work with that.

Q. 16. Did they send a chemist along with you?

A. They sent one there, but he wasn't with me.

Q. 17. Now what other furnaces did you visit in the west?

A. I have visited the region around Kennett, California.

32 Q. 18. What is the extent of those furnaces?

A. I do not know.

Q. 19. Are they large ones?

A. I don't know, I didn't visit the furnaces.

Q. 20. How do they operate with those furnaces?

A. I do not know.

Q. 21. Don't you have any idea?

A. I do not have any definite idea, I didn't visit the furnaces.

Q. 22. Were they larger or smaller?

A. I have already answered you.

Q. 23. Don't you have any conception of whether or not they are of greater capacity?

A. I do not have any definite idea that I wish to swear to.

Q. 24. I don't ask you about what you want to swear to, I asked you if you have any idea about it?

A. I am swearing to what I say, and I want to swear to what I know.

Q. 25. What was the radius around those furnaces?

A. I did not visit in all directions, only went up one valley and back, and right in the immediate vicinity, I went ten miles in one direction and found smelter injury as far as I went. I found it immediately around Kennett and we had another man working there, and I didn't care to take up his problems.

Q. 26. Do you know whether or not they eliminate any acid?
A. I don't know.
Q. 27. Have you ever been in the Ducktown Company's plant?
A. I have never been in the Ducktown Company's plant.
Q. 28. Do you know anything whatever about the process used there?
A. I do not pretend to know about the processes of smelter plants.
Q. 29. Have you ever been in the Tennessee Company's plant?
A. I have never been inside of it.
Q. 30. Do you know anything about the processes used there?
A. Only by hearsay.
Q. 31. I am not asking you to tell if you don't know.
A. I have never been there.
Q. 32. Do you know whether there is one bit of sulphur acid coming out of the plant of the Ducktown Company?
A. I leave that for Dr. ——
33 Q. 33. Do you know?
A. Only what I said from my own standpoint, no, sir. I have never made any analysis.
Q. 34. I want to know if you know as a matter of fact whether there is any,——
A. How could I know?
Q. 35. Please wait until I get through with my question. Do you know whether or not there is any sulphur gas coming out and doing damage from the Ducktown Company?
A. I know you have fumes that smell and look like fumes that are poisonous, that I know to be true.
Q. 36. Where did you ever smell the fumes coming from the Ducktown Company's plant?
A. In the air the first year I was here.
Q. 37. When was that?
A. I couldn't tell you the exact day, but in September.
Q. 38. In 1913?
A. Yes, sir.
Q. 39. Where were you?
A. I don't remember just exactly the location I was in. I got a very good whiff the other day.
Q. 40. Where were you?
A. Around in the vicinity there, close to the plant, not far, a quarter of a mile I should judge.
Q. 41. So you have smelled those fumes about a quarter of a mile away?
A. I should judge so. I know they were very disagreeable in breathing.
Q. 42. You have divided it out, you have divided the injury into zones, you have an acute zone first, that is the nearest zone to the plant.
A. The nearest zone was the barren zone, where practically everything is destroyed.
Q. 43. How far does that zone extend from the Ducktown plant at the present time?

A. It varies in different directions, it is probably three to five miles where there is not much vegetation.

Q. 44. You have seen that at the present time, the barren zone extending three to five miles?

A. It extends from Copperhill to beyond the Ducktown Company's plant and Ducktown, north and south.

Q. 45. You mean there is no vegetation of any consequence at all?

A. It really looks like a desert.

34 Q. 46. When were you there?

A. Friday afternoon.

Q. 47. Didn't you see gardens within two hundred yards of the plant?

A. I saw two or three small gardens at some places.

Q. 48. Didn't you see them right near that plant?

A. I may have.

Q. 49. Did you see anything the matter with them?

A. No, I didn't examine them, I don't remember seeing any gardens, I remember seeing some morning glories in a lawn.

Q. 50. Didn't you see perfectly healthy beans and Irish potatoes and the usual things that grow in gardens within about two hundred yards of the plant?

A. I saw some morning glories.

Q. 51. Are they not one of the easiest plants to be killed by those fumes?

A. They are quite hearty.

Q. 52. You testified a while ago you saw some gardens, now did you or not?

A. I didn't see any gardens, I didn't see any gardens, what I would call regular gardens of vegetables. I may have seen a three by four patch, but didn't notice and have any definite idea of a regular garden with beans, peas and radishes and things of that kind in it.

Q. 53. Will you swear there are not any there?

A. I wasn't looking for them. I wasn't looking for them.

Q. 54. What were you looking for?

A. To see that plant and see how their smoke came out, if you want to know.

Q. 55. You didn't look right around there to see whether vegetables was growing right under it?

A. Yes, sir, I looked to some extent and I saw some corn patches and grass that looked sickly.

Q. 56. Do you swear that all the the grass around that plant looks sickly?

A. I swear there wasn't any grass except in some lawns, where it had been taken care of.

Q. 57. Do you swear that all the grass is destroyed?

A. It has destroyed the original grasses. They have some grass, very sorry, not original grass.

35 Q. 58. Did you see the peach orchards near that plant?

A. I didn't see them, I didn't go all around, I went on the main road.

Q. 59. Will you swear there are no peach orchards?
A. I will not swear, because I wasn't taking observations.
Q. 60. Why didn't you, right around and near the plant?
A. Because I didn't have time.
Q. 61. Why didn't you take time?
A. That is my business and not yours.
Q. 62. Who brought you here?
A. The Secretary of Agriculture sent me here.
Q. 63. Nobody else had anything to do with it?
A. I got my directions from him.
Q. 64. Who from?
A. Mr. Metcalf.
Q. 65. At whose request?
A. The Governor of Georgia wrote the Secretary of Agriculture.
Q. 66. Who influenced the request of the Governor of Georgia—Mr. Shippen?
A. I don't know anything about that.

By COUNSEL FOR PLAINTIFF: We except to that question from the fact that Mr. Shippen didn't have anything to do with it.

Overruled. Appeal prayed and granted.

By COUNSEL FOR DEFENDANT: Mr. Shippen runs this lawsuit, I have seen nobody else running it.

Q. 67. How many times have you been around that furnace?
A. I don't know,—One day the previous year I drove on the wagon road that takes a short cut from Ducktown, I didn't go the main road.
Q. 68. Didn't you know there had been a good deal of evidence introduced in the case in regard to peach orchards?
A. I know nothing of what evidence has been introduced in this case. I didn't come here of my own free will. I will tell you that right now. I was forced to come is the reason why I came here.
Q. 69. You were not told anything about any peach orchards, fine orchards, located right around near the plant?
A. I was not.
36 Q. 70. Didn't you examine the yard, near the furnace, of Capt. Nolde?
A. I didn't get out of the automobile, went through rapidly, I was afraid we were violating the speed law. Pretty near ran over a horse.
Q. 71. What were you doing that for?
A. In a hurry to get back to Blue Ridge so I could get my dinner.
Q. 72. You didn't think you would be able to get anything to eat in Ducktown?
A. It didn't look like it.
Q. 73. As a matter of fact you was — caring about making any examination right around the furnace, as to what was growing there?
A. We went out there in an automobile, and the man had to get back here because he had -nother engagement for the automobile.
Q. 74. The gentlemen conducting this case didn't ask you to make any examination around the furnaces?

A. The gentlemen conducting the case?

Q. 75. Yes, sir.

A. I had not seen the attorneys at that time.

Q. 76. You were taken down and around here in North Georgia to make some examinations, that is true?

A. We went over quite a good deal of territory.

Q. 77. But no one undertook to take you around the furnaces and point out the furnaces and have you make an examination there, did they?

A. No one did, because I was conducting the work myself, and I didn't do it.

Q. 78. Why didn't you?

A. Because I didn't have time. I would have done so, had I the time. I thought it more important to see the smelter injury in Georgia.

Q. 79. Did you try to find out what the Ducktown Copper Company was doing?

A. My instructions were to visit the smelter injury in Georgia. There is injury in Georgia. I didn't need anybody to show me anything about studying the smelter injury right around this defendant in this lawsuit, to see what it is doing.

Q. 80. You didn't regard it as important,——

A. As I understand, it is a Georgia case, and the evidence
37 was to be taken as to what is going on in Georgia, and I studied this country.

Q. 81. You didn't regard it as important to find out who was doing it?

A. I merely followed instructions in that regard, I am in the service of the United States Government.

Q. 82. I don't recall just how far you said that barren zone extended?

A. I don't know exactly, I said north, west and south of Copperhill and beyond Ducktown, three to five miles, I should say.

Q. 83. Does the barren zone extend over into *to* Georgia?

A. Very little. We have trees on this side, to some extent.

Q. 84. Then how *a* far does the acute zone extend?

A. It extends in varrying distances, out in each direction, owing to the way the winds blow. I cannot make an estimate, I have not traveled all over the area.

Q. 85. I wish you would please make an estimate?

A. As to the south, I will only make an estimate?

Q. 86. How far south?

A. The acute injury extends six to ten miles as far as I have made any observation. I didn't go beyond that.

Q. 87. From what point?

A. On some species, I take it you will find it further.

Q. 88. Six to ten miles from what point?

A. Copperhill. I believe I would say that I collected species ten miles from Copperhill except in this direction.

Q. 89. I believe you said something about the furnaces at Copperhill about being in the center of the zone, not in,——

A. Not in the center of the denuded area.

Q. 90. Somewhat to the south?

A. Yes, sir.

Q. 91. Now, as a matter of fact, the furnaces which produce the injury of this kind is never in the center of the zone, is it?

A. Nearly so, ordinarily.

Q. 92. Now, is not that to be determined by the air currents?

38 A. The elipse made along in the direction of the prevailing winds, made along to one side, made longer on one side than the other.

Q. 93. So, if the prevailing winds in this country here is north and east, then naturally the zone would extend in that direction?

A. The zone of injury extends in the direction of the prevailing winds, but I have already said the acute zone of injury was to the north.

Q. 94. I believe you stated this plant was south of the center of the zone?

A. I base my judgment on the map made by Dr. Haywood, made some time ago, as to the region north, and also what I observed on the train as I came through. I noticed it at the second station to the north of Ducktown.

Q. 95. So, as a matter of fact,——

A. I made some observations north to that extent.

Q. 96. So if the Tennessee Copper Company was producing this injury, you would naturally not expect to find that plant in the center of the zone?

A. I would expect to find it near to the point of the elipse, the foci of the elipse, but it is to the south of that.

Q. 97. How do you know it is not?

A. By my eye, I can see it is on the edge of it.

Q. 98. How near to the edge?

A. Within half a mile of the edge.

Q. 99. That is of the acute zone?

A. Of the barren zone, the acute zone I have not measured. I am simply giving that as an opinion.

Q. 100. You were testifying a while ago from a map somebody else had made?

A. I said I saw smelter injury at the second station north of Ducktown, and then I referred to a map Dr. Haywood had made.

Q. 101. Is it not a fact that the figure will always be an exact elipse?

A. It is an irregular one. I have already stated in my evidence that the zones are very irregular.

Q. 102. Then when you ta-ke about the foci of an elipse, that is all guess work.

A. Not exactly, no. You can have a foci of an irregular

39 elipse.

Q. 103. So it is you are going to have the Tennessee Copper Company outside of that place in there, is not that true?

A. No, sir, I am not prejudiced.

Q. 104. I see. Anyway, if the winds, the prevailing winds are from the south, or from the west and southwest, you would naturally find that damage had extended in the opposite direction?

A. I don't know that they are.

Q. 105. I didn't ask you one word about that? I said if that be true.

A. If that be true, I would expect that damage would go in the direction of the prevailing winds.

Q. 106. How much time have you spent in Tennessee and North Georgia?

A. Which trip?

Q. 107. Your whole trips?

A. I don't know.

Q. 108. A month?

A. I presume I have spent over a month. Not much over, have only been here two years.

Q. 109. You have not spent enough time to know of your own knowledge, about the prevailing winds?

A. I have not spent enough time to know the winds or whether. I figure that from weather reports.

Q. 110. You have testified about the smoke from those two companies, how far it would carry, I believe that you testify that the Ducktown Company, the acute zone so far as the Ducktown Company was concerned, would only extend six to fifteen miles—what did you swear about that?

A. I don't remember exactly the distance I said from the Ducktown smelter, I said it would extend along the lower part of the mountains to the south.

Q. 111. You were basing that all together on the supposition,——

A. On observations that I have made.

Q. 112. Will you please wait until I get through with my question. That was based on the supposition that the Ducktown Company was not elevated, was not eliminating any acid from the smoke?

A. No.

Q. 113. What were you basing it on?

A. Observations.

40 Q. 114. What did you see?

A. The acute injury I saw.

Q. 115. Of course, you saw that, but did you see the *a*moke that did it?

A. Yes sir, I saw the smoke when it came up.

Q. 116. Did you see the smoke which did the injury that you swear about?

A. Nobody does.

Q. 117. Then you didn't see it.

A. No, nobody ever saw the smoke enter into the cell of a leaf.

Q. 118. Then you didn't see the smoke that did that particular injury?

A. I did not, it is not possible to see it.

Q. 119. Then you don't know whether the smoke came from the Ducktown Company's plant or not?

A. I cannot swear that a particular particle of Ducktown Smoke entered into a particular cell and injured it.

Q. 120. If the Ducktown Company was eliminating its acid from the smoke, then it didn't do the injury at all, did it?

A. It is impossible,—I know it is impossible to take all the sulphur out of the smoke.

Q. 121. How do you know?

A. The chemists in Germany have said it.

Q. 122. Are you an expert on chemistry?

A. The plant pathologist,——

Q. 123. Are you qualifying now as an expert chemist?

A. I am qualifying as a man who reads some chemistry.

Q. 124. That is all you know about it? You know absolutely nothing of your own experience and knowledge?

A. I do not.

Q. 125. Yet, you are swearing it is absolutely impossible to take it all out?

A. I swear the Germans say so.

Q. 126. Suppose they take eighty per cent out. Would it be possible for the remainder to do damage from the furnaces?

A. Tell me how many tons are turned out.

Q. 127. I am telling you nothing,——

A. I don't know, unless you do that

Q. 128. What they are actually doing, you don't know at all.

A. I don't know.

Q. 129. Suppose you take the Ducktown Company's plant entirely away from there, could this damage have been done
41 by the Tennessee Copper Company?

A. Not in my opinion, to the same extent, not closer.

Q. 130. How close was it?

A. Was what?

Q. 131. These damages you are swearing about, you think was done by the Ducktown Copper Company's plant?

A. If you will give me a map, I will tell you

Q. 132. I thought you conld guess at it?

A. I am not guessing.

Q. 133. Well, then measure it.

O. (Witness looks at map.) What question did you ask me?

Q. 134. How far these plants were that,—I want to know how far those points were that were damaged from the Tennessee furnaces?

A. That east of Epworth, perhaps about three miles.

Q. 135. You mean the points east of Epworth?

A. Yes sir, where I handed in specimens.

Q. 136. You mean from the Tennessee Copper Company?

A. Yes sir.

Q. 137. Then it is six miles from the Ducktown Company, is that true?

A. (Measuring on map.) Yes sir, it would be not quite six miles,

a little less, about five and a half or five and six-tenths from Isabella to the point east of Epworth. About two miles east of Blue Ridge, about eight miles from Copperhill.

Q. 138. How far is that from the Ducktown plant?

A. I cannot tell exactly. I couldn't be sure as to the exact distance, but is would be from ten to ten and one half miles to their plant.

Q. 139. From these two points from which you gathered these specimens?

A. Yes sir, a few of them, I gathered from three points. I have already stated that distance from Barnes Mountain. I measured that before, I measured it before, but I don't remember those things after I state them.

Q. 140. Now, were the other points nearer or further than the points at Epworth?

A. The points west of Madola were slightly further, being on Granny Marr Mountain—not much difference from that at Epworth, I could measure it to be exact—the point west of
42 Madoal is about five miles from Copperhill, the Tennessee smelter, and about eight miles from Isabella smelter. Granny Marr Mountain is about seven miles from the Ducktown smelter and five miles from the Tennessee smelters.

Q. 141. So, those points where you gathered these various specimens which you have introduced here are distanced from three to eight miles from Copperhill?

A. You will have to call on the record. I don't remember now. The record will show.

Q. 142. Three to eight miles from Copperhill and from five and a half to eleven miles from Ducktown?

A. Something like that.

Q. 143. Now, Doctor, do you say that the Tennessee plant, that is the plant of the Copperhill company, could not have done that damage?

A. Because the smoke carries too high, ordinarily. I admit that it might drop down nearer and do some damage.

Q. 144. Then you admit it might have done it?

A. It might have done it. I said it wasn't all due to the Ducktown Company.

Q. 145. You mean to testify the fumes coming out of the high stack at Copperhill couldn't produce the damage within three miles of that plant?

A. It could in foggy damp weather, when the fumes come down quickly.

Q. 146. Then there couldn't be any barren zone around the Tennessee smelter at all?

A. Not caused by the Tennessee smelter, there couldn't be.

Q. 147. There couldn't be right around the Ducktown Company because that stack is to- high,—is that true?

A. Not to that extent, because the injury coming out from their other operations.

Q. 148. Don't it come out of their stack?

A. From the usual operations about those furnaces it comes out.

Q. 149. Other noxious gases comes out other than that which passes through and is converted into acid?

A. If you will go around you will smell them.

Q. 150. Did you ever smell it when it came out, coming from both of them.

A. Those noxious vapors,——

Q. 151. That might be capable of doing injury—those noxious vapors might also come from the Tennessee Company?

43 A. I don't know what is coming out there.

Q. 152. Did you ever pass around the Ducktown Company's plant and smell these noxious vapors; if so, couldn't some of them come from the Tennessee Company's plant?

A. There can be some.

Q. 153. Couldn't those noxious vapors do this damage?

A. They might produce some injury.

Q. 154. Couldn't they produce all of it?

A. I don't know.

Q. 155. Then, Doctor, you do admit you don't know whether the Ducktown Company has done all this damage or not?

A. I don't know whether they have done all or not. I simply gave my opinion for the reason that the Ducktown smoke carries lower than the other, and the damage is due more to that company than from the Copperhill plant, that is the reason.

Q. 156. But you do admit that the Tennessee plant might have done it?

A. The Tennessee plant might have done it—you say?

Q. 157. Yes sir.

A. I don't know, I say I don't know what happens in there if the Ducktown Plant was shut down.

Q. 158. But your whole reason for testifying the Ducktown plant did it, or that you think the Ducktown plant did, is because the Ducktown plant has not as high a stack as the other plant?

A. Because I have seen the smoke columns carrying lower than the other.

Q. 159. Your reason for saying the Tennessee plant does not do the damage and the Ducktown plant does do it, is because the Tennessee Company has a high stack?

A. Only in part.

Q. 160. Then what is the balance?

A. What is the balance—because the other smoke carries lower.

Q. 161. I wish you would tell the time when you saw the Ducktown plant emitting smoke that ever went into the State of Georgia, and those places where you saw the damage?

A. I saw it carrying last year over in the Granny Marr Mountain region, going over in that direction, in the last week

44 of September.

Q. 162. Then you saw it one day?

A. Yes sir, I saw it carrying one day.

Q. 163. In the last week of September?

A. Yes sir.

Q. 164. Wasn't that after you gathered your specimens?

A. I didn't gather any that year. I saw the smoke going southeast into Georgia on the mountain spurs through that region, that year.

Q. 165. When did you see the smoke?

A. One of the days, I don't know which. I took no notes.

Q. 166. When did you gather your specimens?

A. The last week of September.

Q. 167. What became of them?

A. I turned them in at Washington.

Q. 168. How much smoke did you see reach the Granny Marr Mountain region from the Ducktown plant?

A. I had no means of measuring it.

Q. 169. How far were those trees up the mountain from which you gathered those specimens?

A. Which ones?

Q. 170. The ones you have submitted here?

A. They were southeast on the lower hills.

Q. 171. How much higher than the Ducktown plant?

A. I don't know, I never took any elevations.

Q. 172. Were they not about as high as the Tennessee Company's stack or plant,—Were they not higher than that?

A. I don't know, I said.

Q. 173. Did you ever see the smoke going from the Tennessee Company's plant and extending into North Georgia?

A. At the same time I saw the other smoke.

Q. 174. Going to the same place?

A. No sir, not the same place, where the Ducktown smoke was coming northeast, it went over a mile or a mile and a half because the angle was such that it would.

Q. 175. The smoke from the Tennessee Company's stack was somewhat higher?

A. Yes sir, and going further.

Q. 176. And of course, you think it was striking higher upon the mountain—was it striking higher than the stack of the Ducktown furnace?

45 A. Yes sir, certainly, carrying much higher.

Q. 177. The Tennessee furnace was producing a great deal more smoke than the Ducktown furnace?

A. I don't know, you just now heard me say I don't know.

Q. 178. You don't know which one has the greater capacity?

A. I know nothing about the smelter side.

Q 179. You have been around them enough to see which is the larger plant, have you not?

A. You cannot always tell the bore of a gun by the size of the barrel.

Q. 180. Are you comparing the plants over there to the bore of a gun?

A. You might do so.

Q. 181. You saw the smoke going from the Ducktown furnace toward Georgia two times last year?

A. Yes sir, two times.

Q. 182. What was the color of it?

A. A sort of bluish or whitish color.

Q. 183. With a kind of yellow turn, or not?

A. I don't know more than it was the color of blue or whitish smoke.

Q. 184. You say you saw smoke arising from the furnaces last Saturday?

A. I did.

Q. 185. The smoke was traveling northeast?

A. Northwest and west.

Q. 186. That was traveling directly away from Georgia?

A. Traveling over in Tennessee.

Q. 187. You saw the color of that smoke?

A. At a distance it looked whitish. The color of the smoke varies greatly. If the weather is cloudy or sunshiny—sometimes it is darker than other times when the sun shines it looks whitish.

Q. 188. Now, with reference to the effect of smoke on plants, I believe you say if the plant is in bloom it will kill the pollen—that is true?

A. A sufficient amount might.

Q. 189. Didn't you testify the first effect it would have would be to kill the pollen?

A. I said it was more sensitive than other parts of the plants.

46 Q. 190. Of course, when the pollen is killed that plant is barren?

A. Again I state that particular part would be barren, more blooms form successive crops of pollen, so there is a chance for the bloom to fertilize after part of the pollen is killed, but not so in the case of the silk is killed.

Q. 191. How does the peach tree produce peaches?

A. The way I have described it, by fertilization.

Q. 192. Then if the smoke struck a peach tree when in bloom the peach tree will not bear peaches that year?

A. It might bear peaches,—No, I didn't say that. I said it would kill the pollen, and those blossoms that were open. They might have other blossoms open successfully.

Q. 193. How many days does a peach tree bloom?

A. It varies with the variety, some will bloom out fairly quick and others about two weeks.

Q. 194. If you find a splendid peach orchard producing a healthy growth of peaches right near the furnaces, then you would conclude there was no smoke emitted from the furnaces while the trees were in bloom?

A. Not necessarily.

Q. 195. What do you conclude?

A. Peaches sometimes over-bloom, and the smelter might thin them down and have a fair crop after the smelter killed them some of them.

Q. 196. Is not that the exception, about over-blooming?

A. No sir, it is not, very common.
Q. 197. Is it the rule that they over-bloom?
A. In some localities.
Q. 198. How is it there in the Ducktown locality?
A. I have never taken observation.
Q. 199. Why is it you are always trying to inject exceptions into your answers and don't answer according to the general rule?

By COUNSEL FOR PLAINTIFF: We except to that question as irrelevant.

Overruled. Appeal prayed and granted.

A. I refuse to reply.

47 Q. 200. Now, if you know that there — peach trees around in the vicinity of the furnaces which bear fine crops of peaches and do that as regularly as peach orchards anywhere else in the country, is not that an indication to you that there are no damages arising from smoke during the blooming period of the peach trees?

A. I don't know it.
Q. 201. What does it indicate, I am not asking if you know.
A. You asked me if I knew. I don't know.
Q. 202. What is it evidence of?
A. Ask the question again.
Q. 203. (Stenographer repeats question)
A. I don't know it.
Q. 204. I ask you is not that evidence of that fact?
A. I don't know it, unless I know I cannot answer it.
Q. 205. Wouldn't you regard that as an indication, or as evidence that there was no smoke injury during that period?
A. I don't know that I should answer that question the way it is worked, but I will try to give the information you want.
Q. 206. I want an answer to my question.
A. The question is too indefinite, I don't know there is any orchards.
Q. 207. But suppose there are orchards there?
A. I have got to know the other conditions.
Q. 208. Suppose there are orchards in the immediate vicinity of the Ducktown Copper Company, of the company's plant, peach orchards which are bearing peaches right along as abundantly as any other orchards in this whole country is that or not evidence there was no smoke damage there at the time these peaches were in bloom?
A. If there is such an orchard, I don't know that there is,—and it bears peaches, that might be an indication at that time there wasn't enough injury at that time, of course, to kill all the pollen. That is the only way I can answer you.
Q. 209. How do beans reproduce?
A. By fertilizations
Q. 210. Do tomatoes reproduce the same way?

A. They do.

48 Q. 211. How do irish potatoes reproduce?
A. By fertilization, it don't reproduce, it don't reproduce

originally, originally we get them from buboes. Some verieties reproduce by fertilization.

Q. 212. Will the killing of the bloom of irish potatoes — any effect on it?

A. Not on the root crop.

Q. 213. What are the blooms for?

A. They are relices of the past, we don't know exactly what use they are.

Q. 214. Take these various vegetables which grow in gardens and which are reproduced by fertilization, if you find splendid gardens and orchards right around near those furnaces, is not that evidence to your mind those furnaces were not doing injury in that neighborhood?

A. If I found splendid gardens, it would, I have not found them.

Q. 215. I believe you say you didn't look for them?

A. I didn't see them.

Q. 216. I believe you have testified how corn is fertilized and reproduced? Suppose you find good crops of corn around in that neighborhood, is not that an indication to you there is no smoke injury on that corn, or was none on the corn when it was being fertilized?

A. I suppose as I am a botanist, I should answer the question, I have not made any investigations.

Q. 217. I am asking you to answer the question as a scientist.

A. If I found splendid corn fields close to the smelters I would,—If there had been any injury on it, it would not have been a splendid cornfield, if you want to put it that way. But if I had, I would have thought possibly the fumes might be carried over the cornfield. I wouldn't look to see if they hadn't.

Q. 218. You just think the fumes carry over the whole country, don't light at all until they get down into North Georgia?

A. I refuse to answer that question, it is not relevant.

Q. 219. Now, you say you found a good many pine trees ruined, young pine trees?

A. Not many.

49 Q. 220. How were they reproduced?

A. By seed.

Q. 221. How do the seed reproduce?

A. By fertilization.

Q. 222. Didn't you find a good many pine trees bearing seed?

A. Not in the acute injury region.

Q. 223. As a matter of fact, wasn't this sample of pine you brought the only sample of pine you found where there was any injury?

A. No sir, I have not sworn that.

Q. 224. Did you find any pine that was not reproducing seed?

A. I don't remember that I saw any that was?

Q. 225. Did you look to see?

A. I looked at the pines.

Q. 226. Will you testify you examined a single pine that was not reproducing?

A. I will swear I didn't see one that was.

Q. 227. Did you look for that purpose?
A. I did.
Q. 228. Didn't you testify that at first?
A. I wasn't asked.

By COUNSEL FOR PLAINTIFF: We except to that question for the reason the witness has already answered the question in substance.
Overruled. Appeal prayed and granted.

Q. 229. I believe you testify that wheat and oats are reproduced by fertilization?
A. Yes sir.
Q. 230. Rye is produced the same way?
A. Yes sir.
Q. 231. Well, where you find a splendid oat field, a splendid wheat field, don't you know there has been no damage from smoke fumes in that vicinity?
A. As a hypothetical question, yes.—If I should find those, but I have not found them.
Q. 232. If you happened to run across a field that produced 136 bushels of corn to the acre, you would think that a good crop?
A. Yes sir, I would, I have not investigated corn fields, I am not an expert on that subject.
Q. 233. You traveled over a big territory last Friday and Saturday?
A. Yes sir, went about sixty miles.
50 Q. 234. And spent part of Sunday on that trip?
A. No sir, I would have spent Sunday if we had gone out.
Q. 235. Well, on that trip did you examine any crops?
A. I did not.
Q. 236. Did you see any?
A. Not specially, I didn't make any special observations of the crops, more than this blackberry twig.
Q. 237. Was that the only thing you found there was any smoke damage on?
A. The beans were damaged.
Q. 238. Why didn't you bring along a specimen of injured beans?
A. They also had a fungous disease present.
Q. 239. Why didn't you bring them along so we could see that?
A. I am not working on that, that is not my work, the diseases of beans.
Q. 240. You are working, trying to help us see what is the trouble here in Georgia?
A. That is Mr. ~~Orpen's~~ business, he works on bean diseases, he would get angry at me if I did.
Q. 241. Were there any tomatoes in that garden where you examined that blackberry bush?
A. I don't remember seeing any.
Q. 242. Did you see any irish potatoes?
A. No sir.
Q. 243. Had nothing there but beans and blackberry bushes?
A. Probably, but I didn't look very carefully.
Q. 244. Why didn't you examine the whole garden?

A. I wasn't working on it.

Q. 245. Were you trying to find out what these furnaces were doing in North Georgia?

A. Not to that extent. I only had time to work on the tree diseases, as that was not in my line I did not take up any time with it.

Q. 246. So it is there was a garden where you took the specimen from the blackberry bush?

A. I didn't investigate the garden.

Q. 247. Were you authorized to investigate that?

A. I was authorized to investigate the forest in North Georgia.

Q. 248. So you are not going to swear to anything except what the Secretary of Agriculture tells you?

A. Nothing only what I found.

51. Q. 249. If you found something he didn't tell you to swear to, would you testify about that?

A. I might if I found it.

Q. 250. So it is, you didn't examine that garden you were in?

A. I certainly didn't, I didn't have time.

Q. 251. Is a blackberry bush a true?

A. It is a shrub, we work on them.

Q. 252. You were sent here to examine trees?

A. The office of pathologists works on shrubs and trees.

Q. 253. Is that the only garden you saw on the trip?

A. The only one I even looked into.

Q. 254. Did you look into any cornfields on that trip?

A. There were some cornfields, of course, but I didn't pay any attention to them.

Q. 255. You didn't try to see whether or not the corn had been damaged?

A. No, I didn't have time.

Q. 256. Did you see any potato patches?

A. I don't remember seeing any potato patches, I remember hearing several gentlemen say,——

Q. 257. Don't tell anything about that, why are you trying to slip that in?

A. I didn't intend to say that, leave that out.

By Counsel for Plaintiff: We except to the statement of General Fowler that the witness is trying to slip anything in, it was in a way responsive to his question. For that reason the answer was, while not strictly competent, it might be relevant in that sense.

Overruled. Appeal prayed and granted.

Q. 258. Well, you have brought in specimens of about how many different kinds of tree growths?

A. I have not counted them, I don't know.

Q. 259. How many varieties do you suppose you saw on that trip.

A. That were injured?

Q. 250. No, I am not talking about injured, all the kinds you saw?

A. Of trees?

Q. 261. Yes sir.

A. About eight specimens of oak, three specimens of pine, chest-

nut, chinquapin, persimmons, two specimens of hickory, one
52 of poplar, one of maple, and probably,—I don't remember seeing other trees.

Q. 262. Didn't you see a great many varieties of which you brought in no specimens at all?

A. Not that I remember. If you call over their names, I can tell you.

Q. 263. You know the usual plants and trees you see in North Georgia?

A. Yes sir.

Q. 264. Don't you know there are at least forty varieties in North Georgia?

A. I know at least forty species of trees in North Georgia, I don't know they are all here, though.

Q. 265. Don't you know there is at least forty species of trees in this territory?

A. There may be, but not in the zone of acute smelter injury that I investigated.

Q. 266. You were asked about the conditions of forests, and you state they are not in good condition, have dead trees, you have seen other forests that had as many dead trees?

A. Yes sir, I have seen them killed by fire, where they had more.

Q. 267. Don't you know that there has been a great deal of fire injury in the forests of North Georgia?

A. I know as a rule fire kills completely.

Q. 268. Don't you know it is a fact that it sometimes kills part of the trees?

A. Yes sir, and I know,——

Q. 269. Well, go on.

A. I know forest fires leaves signs which botanists can tell.

Q. 270. Don't you know from what you have observed that forest fires have damaged the forests in North Georgia?

A. Certainly, everywhere more or less.

Q. 271. Just passing through the forests of North Georgia, you see dead trees from time to time—don't you see a great many?

A. Yes sir, from time to time I see dead trees in the forests. It is natural that they should die.

Q. 272. I believe you said another condition that indicated there was trouble in these forests here is that the oaks have pink
53 leaves, is that what you said?

A. I said in smelter injury where the fumes are on them there are pink spots on the leaves.

Q. 273. I believe you say that acute zone of injury extends,——

A. I said one form of pink,——

Q. 274. —Extends from the Tennessee fifteen miles?

A. No.

Q. 275. How far does it extend?

A. The furthest point I observed it was in the neighborhood of eleven miles, I didn't look for it further, as I stated.

Q. 276. Was that within eleven miles air line of the Tennessee Copper Company's plant?

A. I presume eleven miles, maybe more.

Q. 277. How is that?

A. Let's see (Measuring on map) according to this map it is over eleven miles, but not twelve miles.

Q. 278. Between eleven and twelve miles?

A. Yes, sir.

Q. 279. Is that from Copperhill?

A. No, from Isabella.

Q. 280. Then it is about nine miles air line from Blue Ridge to the Tennessee Copper Company's plant and about twelve miles to the Ducktown Copper Company's plant?

A. As near as I can measure it.

Q. 281. Well, now from where we are sitting, we are in sight, I believe, of a sycamore, and a number of variety of trees, are we not?

A. Yes sir.

Q. 282. Will you look around and see whether or not you can see even a pink leaf anywhere in sight?

A. I couldn't from here, I refuse to do that, you have to go out and look more closely.

Q. 283. Can you see the least indication or evidence of any damage or injury whatever arising from any smelter fumes here in Blue Ridge?

A. Not from here, if I go out and hunt for it,——

Q. 284. Look out there and see.

A. That is not the way to look for it.

Q. 285. Do you refuse to look out at the window to see?

A. Yes sir, I look at it as a whole.

Q. 286. Are there not some leaves within thirty feet of you?

A. Yes sir.

Q. 287. Do you see any evidence whatever of injury from smoke on a single leaf?

A. (Goes to the window.) What kind of injury?

54 Q. 288. I said smoke injury?

A. That tree there is slightly yellow, it is not as green as it might be.

Q. 289. Do you think smoke did it?

A. Very apt to.

Q. 290. Do you think it did do it?

A. Yes sir, I do.

Q. 291. You believe,——

A. I told you they had chronic injury in Blue Ridge.

Q. 292. To what extent have you seen any evidences of smoke here?

A. A slightly yellowing on the leaves.

Q. 293. Do you swear it was done by smoke?

A. I swear smoke was doing it that way, that looks like it.

Q. 294. Is that the kind of injury you were swearing to a while ago?

A. No sir, that is not a good type of chronic injury, if you want to try to make a type out of that.

Q. 295. So you are not testifying where you got these specimens the conditions as they are in Blue Ridge?

A. No, no acute injury here.

Q. 296. The way you found these specimens, you were searching through the mountains?

A. No,——

Q. 297. —going to a tree and examining it and picking out the leaves?

A. No sir.

Q. 298. How did you get them?

A. They were so abundant, I could see the trees shining in my face, and I would go out and get them.

Q. 299. How close were they?

A. Some trees a few rods from the road, the injury was bad, I could see trees that were affected close to me and half a mile away. I could see they were injured by fumes.

Q. 300. Colored pink?

A. Nothing like it is here at Blue Ridge, nothing of the kind, Blue Ridge don't even show a good type of chronic injury.

Q. 301. You can see some peach trees from here, do you see any trouble with those trees?

A. I don't see them.

Q. 302. You could if you would turn your eyes and look at them?

A. Unless I am ordered to do so, I refuse to investigate that way.

55 Q. 303. You can see some corn from here, do you refuse to look at that corn and testify whether any injury to that corn, or not?

A. I refuse to investigate that way, that is undignified and unprofessional and inaccurate.

Q. 304. I am passing on the profession, you pass on your own business.

A. I refuse.

By Counsel for Plaintiff: We except to that because it is incompetent.

Overruled. Appeal prayed and granted.

Q. 305. You could see, if you would look out, you could see various kinds of vegetation, which is growing here, do you refuse to look?

By Counsel for Plaintiff: We except to the question, as the witness has no opportunity to make an investigation of any kind, to make a proper examination, and for that reason he does not have to answer.

Overruled. Appeal prayed and granted.

Q. 306. Are you acquainted with Dr. D. E. Fernow?

A. Very slightly.

Q. 307. What is he?

A. He is a forester, if I remember, stationed in Canada.

Q. 308. Don't you know at one time he was connected with the United States Department of Forestry?

A. I think so.

Q. 309. For twelve years, wasn't he?

A. I don't know.

Q. 310. Were you under him?

A. I was not. I have never been in the forest service.

Q. 311. Is he not one of the greatest authorities on Forestry.

A. I do not consider him as such.

Q. 312. You would regard him as reliable if he was Chief of the Bureau?

A. That is a matter of opinion, I do not regard him highly personally.

Q. 313. What is the trouble, has he ever disagreed with you?

A. I never had any personal dealings with him.

56 Q. 314. Did you ever meet him?

A. I have.

Q. 315. Who is the Chief of the Forestry Division now?

A. Henry Solon Graves, is Chief, he is not my chief though.

Q. 316. Dr. Hedgecock, on your trip last week, I believe you say you begun on Friday?

A. Yes sir, Friday at noon.

Q. 317. Where was the first place visited?

A. Went down along the roadway to Copperhill and inspected along the road and side of the ridge as we went.

Q. 318. You mean from Blue Ridge?

A. Yes sir, Blue Ridge to Copperhill and then over to Ducktown and back by the way of the Ducktown Smelters.

Q. 319. You went in an automobile?

A. Yes sir, stopped in various places, but didn't get off around Ducktown.

Q. 320. How far did you go away from the road?

A. Not over ten rods on that trip.

Q. 321. Who was with you?

A. Mr. Clarke, Mr. Johnson and a driver, I don't know his name.

Q. 322. You didn't take any samples on that trip?

A. Yes sir.

Q. 323. Which ones have you filed?

A. I took one specimen I reported about two miles from Blue Ridge.

Q. 324. Do you remember what it was without looking at the number?

A. A specimen of Quercus Coccinea, Exhibit No. 33.

Q. 325. You gave the latin name?

A. It is scarlet oak. We also got a specimen of blackberry bush from Angel's garden and some specimens reported, collected near Epworth, Georgia, specimens 27 and 31, the specimen from Angel's garden is 32.

Q. 326. You got all those on Friday?

A. Yes sir.

Q. 327. Now, on Saturday, where did you begin your trip? I believe you stated at Blue Bidge?

A. Yes sir, we stayed all night in Blue Ridge and started from here that morning.

Q. 328. Did you go horseback on your trip Friday?

A. Yes sir, went in an automobile both days.

57 Q. 329. Who was with you on that trip?

A. On the second trip Mr. Vestal and his son and Mr. Clarke and Mr. Johnson, Mr. Vestal's son drove the automobile. Mr. Vestal accompanied us—J. P. Vestal.

Q. 330. What different points did you visit on Friday?

A. We went over to Epworth and looked around a little in the forests and examined some specimens, that Mr. Vestal himself had collected, and wanted to know about, and then we went on along the road and stopped at various points, we didn't select specimens at every point we saw injury, but the next place we collected specimens was beyond Medola, about a mile, and the next place was at the foot of Barnes Mountain and up on the mountain, mostly on the mountain, in fact, it was all on the mountain, the foot was the slope of the mountain. The next place we collected specimens,—we stopped at several points, was on Granny Marr Mountain, we collected from those places. We didn't collect from every place we saw injury by any means.

Q. 331. How far by road was that from Blue Ridge?

A. I don't know, I had no way of telling.

Q. 332. You didn't read the meter on the automobile?

A. It had none on it.

Q. 333. You collected specimens at three points along the road?

A. Yes sir, Saturday we collected specimens at three points and examined at many points we didn't collect.

Q. 334. How fast did your automobile travel as you went along?

A. Various speeds, depending on the number of rocks in the road, slowed up so much I couldn't figure the rate.

Q. 335. What time in the day did you start?

A. We started in the morning, I think, about seven thirty o'clock.

Q. 336. What time did you get back?

A. After six.

Q. 337. At night?

A. Yes sir.

Q. 338. Have you no idea about how far you traveled?

A. About sixty miles, I should guess, from the lay of the country and contour.

Q. 339. Did you come back the same way you went?

58 A. We did not, we returned down through Copperhill from Granny Marr mountain, I could show you on the map if I had it.

Q. 340. Then you came back to Blue Ridge the same road you came Friday?

A. Yes sir, came back from Copperhill to Blue Ridge without stopping, made a rapid run on that.

Q. 341. What became of those specimens Mr. Vestal gathered?

A. I suppose he has them and will submit them in evidence later.

Q. 342. What does he intend to do with them?

A. I don't know what he intended doing with them,—that is I didn't take possession of them.

Q. 343. Didn't you say you made a third trip, was that on mountain?

A. Went down and Mr. Shippen went out to an orchard and back. Did not make an extensive trip.

Q. 344. That was at Ellijay?

A. Yes sir.

Q. 345. Do you know how far that is from Blue Ridge?

A. I do not.

Q. 346. Now, you have introduced specimens which you say were injured otherwise than by smoke?

A. Yes sir.

Q. 347. Well, to an ordinary layman those leaves present about the same appearance as those injured by smoke, don't they?

A. I don't know, I am not a laymen, and I cannot speak for him, they don't to me.

Q. 348. Now, suppose a tree with those leaves was forty yards away, fifty yards away, can you tell the difference?

A. Yes sir. I will let you juggle my specimens and pick them out.

Q. 349. I know, but suppose you saw a tree fifty yards away that has discolored leaves on it, now, can you tell what it was discolored those leaves, until you walked up and examined it?

A. Fifty yards away?

Q. 350. Yes sir.

A. You couldn't be positive fifty yards away, you might not readily fifty yards away, you couldn't be certain. That is not the way I investigate.

Q. 351. Then you cannot tell whether they are discolored along the skeleton of the leaf?

A. No sir, not that distance. I find scientific work is done
59 in a more careful way.

Q. 352. As I say, you don't know how it would be to a man that is not versed in that work, who has not made a special study of it?

A. I wouldn't want to vouch for his investigation.

Q. 353. I wouldn't want to vouch for some botanists either. Well, Doctor, can you always, even you,—Can even you a scientist, be always positive whether a tree is damaged by smoke?

A. In July and August, I believe I can. When frost comes, after frost, you have fall discoloration, it mixes up things and it is more difficult, but you can even then see smelter injury mixed with the fall discoloration.

Q. 354. Can you swear positively you can tell in every instance in July and August?

A. I have never failed. I think I know. So far as I have been tried, I never have failed.

Q. 355. Did you ever have a test made to see whether you failed or not? You have just passed on your own judgment?

A. I have had people submit things to me that I didn't know was injured by smelter fumes and I told them what it was.

Q. 356. You know, right or wrong?

A. They told me where they got it, what the cause was.

Q. 357. How do you know they knew?

A. They knew, they were botanists and knew under what conditions they were taken.

Q. 358. What botanists did you ever have submit those things to you?

A. Blank and Shipp of Anaconda Copper Company. That wasn't done before a Court, just a personal matter. I never had those submitted to me in court.

Q. 359. Doctor, is it not a fact that oftentimes plants are treated with poison,——

A. I would like to make a qualification. A man might urinate on a special spot and urinate on the leaves, and it would look like smelter injury, but a man could not urinate on an entire
60 forest. I will qualify that still further, certain acids might make up a solution and you could pass them to me, and they might look so much like smelter injury—it might result in artificial injury. You can manufacture specimens like that. It has been done in Court by smelter experts.

Q. 360. It is a fact that poisons are often used as a remedy for plants?

A. They are.

Q. 361. You spray with certain poisons for certain troubles?

A. Yes sir.

Q. 362. Is it not a fact that smelter fumes would be good for certain diseases?

A. Smelter fumes, if they could be applied just at the time and in the right manner, they might be a benefit to certain fungous troubles. I don't know that they would not, but they would have to be applied in a very diluted quantity and hold them around the plant a definite time, and not applied any more.

Q. 363. Is it not true,——

A. I want to add to that, it has never been used to my knowledge, as a fungicide.

Q. 364. Is it not a fact that sulphur fumes from furnaces are applied,——

A. Yes sir, they are applied in North Georgia in diluted quantities.

Q. 365. Don't you think it is probable that they are often beneficial to the plants?

A. I doubt it.

Q. 366. Don't you think that it is very probable that they are applied often to plants suffering from fungus disease, in proper quantities so as actually to be a benefit to the plant?

A. I doubt it very much. I never heard of anybody doing that?

Q. 367. They are destructive to certain classes of fungus diseases, are they not?

A. I don't know, I am assuming that fungus is more sensitive to

sulphur than plants, I don't know it to be a fact. Certain kinds of fungus might be more sensitive to the gas.

Q. 368. From what little observations you have made in North Georgia, the plants are not sensitive to fung-us diseases like some others you have seen?

61 A. I have not noted it, I have found some fung-us diseases and I have also found fung-us diseases elsewhere.

Q. 369. You of course, have observed dead trees from time to time, and in looking at the foliage on the forests generally through North Georgia, is it not a fact that they are subject to very few diseases?

A. No, not,—No, I cannot say they are subject to very few diseases, I think they are subject to as many diseases as you will usually find in forests.

Q. 370. Now, with the exception of this little stretch of damage you found along here in one place, just observing the forests as a whole, do you know of any forests anywhere that look healthier than the forests of North Georgia look?

A. Where?

Q. 371. Anywhere you have visited?

A. In what state?

Q. 372. Anywhere in the Southern States.

A. Yes sir.

Q. 373. Where?

A. You will find the forests from Murphy to Asheville, such as,—except the chestnut, is healthier than here.

Q. 374. Is there not a good deal of hemlock dying through that section?

A. I didn't see it, I looked all the way over.

Q. 375. You did notice the chestnut was dying?

A. Yes sir, I found that dead beyond Asheville.

Q. 376. That chestnut disease does not strike the North Georgia country?

A. I have not found it.

Q. 377. You don't know how it is in Tennessee?

A. I have been in the Government forests west of Knoxville in several places, but have not found it in there.

Q. 378. You have never been in the forests of the Cumberland Mountain- in Tennessee?

A. I believe I have not been on the Cumberland Mountains, they lie further west,—No, I have never been in there; I have been in this main range to the east.

Q. 379. Well, now what diseases are prevalent in North Georgia forests, you say they have some diseases, not so healthy as further east?

62 A. I didn't say that.

Q. 380. Murphy is east, is it not?

A. I cannot say as to all the diseases in that region, because I have not examined those forests closely, I just passed through and looked at the forests. You asked me if I knew the forests as a whole were

healthy. I have not studied the root diseases. Before I could state about that, I would have to make a more careful study.

Q. 381. Now, this injury from smoke, does that result from the poison that enters the leaves?

A. You want my understanding of how it takes place. As far as I can ascertain that sulphur gas, the particles of sulphur gas go in and unite with the water in the cells, and get into the membrane of the leaf, and thereby froms sulphuric acid, or sulphurous acid, probably both. Both are injurious to the cell and they rob them of their water, then by evaporation that acid may concentrate and rob the cell of all the water. Repeated processes of that kind will kill it.

Q. 382. The injury is an injury to the leaf?

A. An injury to the cells of the leaf.

Q. 383. Hence, the injury results entirely from the breaking down of the structure of the leaf?

A. Yes sir, and stealing the water away from it.

Q. 384. The leaves are the lungs of a tree?

A. The lungs and the stomach.

Q. 385. Of course, you will find where the leaves are killed on a tree one year, and the tree will come out in full leaf the next spring?

A. It can if stripped by insects. You can go out and strip all the leaves off, I have done it. The tree is liable to leaf out in the fall again, if that is done early in the season, but this injury shows on it.

Q. 386. Of course, if that is repeated often enough it will kill the tree?

A. If you repeat it three times it will usually kill the tree.

Q. 387. Owing to the variety of the tree?

A. Practically all known plants that have been experimented on were killed the third times, if the insects do it,—We have done that in experiments.

63 Q. 388. Doctor, did you ever use a borer to take small sections out of the tree in order to examine the rings?

A. No, but my men use them, I have been with them when they used the borer, I have been out with them when they used it.

Q. 389. So they are instruments which are used in your department?

A. Yes sir, for rough work, it is done because we don't want to kill the tree, not because we want accuracy.

Q. 390. Don't you know that is the most accurate method of all methods to determine the growth of forests generally?

A. No.

Q. 391. What is the best?

A. The best method, to know absolutely, the absolute growth of the tree is to take a section through and through.

Q. 392. Just cut the tree down?

A. Yes sir, the most accurate method to determine the growth is to take a whole section of the tree.

Q. 393. Then if you were going to investigate for accuracy, you would go in and take a whole section?

A. I would take part of a tree clear through.

Q. 394. Don't you think you could go in a forest and carefully select trees, perfect round trees, and use the borer and tell with almost absolute accuracy about the growth?

A. I don't know it.

Q. 395. Have you experimented enough to know?

A. I have been with the men who have experimanted enough to know, I have taken enough sections of the whole tree to know what it is like.

Q. 396. Don't you know that is the way the German experts determine the growth of forests all together?

A. I have taken many sections in my work in the smelter regions in the west, I have taken whole sections of the trees.

Q. 397. Don't you know that is the method used by the German experts?

A. I do, and I know Americans are getting to be more accurate than Germans in scientific work.

Q. 398. Don't you know that the Americans, in so far as science is concerned, are following the Germans?

64 A. No sir, we have some better experts, and the Germans have said so.

Q. 399. They like to be complimentary to you?

A. I don't know.

Q. 400. Are you familiar with the German authors on the subject?

A. To some extent, I have translated some articles for my own use.

Q. 401. Are you acquainted with the works of Horseldorff Lindau and Rauch?

A. Yes sir, I am acquainted with the works.

Q. 402. That is a work that is recognied as good authority, is it not?

A. It is very good authority, I understand, on a good many subjects, I don't know whether I agree with them or not in all their findings, I don't think I do. I agree with them in some findings and others I don't. They are chemists.

Q. 403. I show you a statement from their work on Page 105, it is marked there, I wish you would translate that and state whether or not,——

A. If you will give me until to-morrow morning, I will translate it.

Q. 404. State whether or not you agree with the statement there made?

By COUNSEL FOR PLAINTIFF: We except to the statement as it is irrelevant, it is not a proper question.

Overruled. Appeal prayed and granted.

By COUNSEL FOR DEFENDANT: It is proper if answered.

A. I will not translate it myself, unless compelled to.

By COUNSEL FOR PLAINTIFF: We except for the further reason that it is written in German and if General Fowler will ask the question, or the substance state the substance of the position

taken, in English, I have no objection to the witness stating whether or not it is authority.

Overruled. Appeal prayed and granted.

A. I know what the statement is roughly, it is Recommendation of the Intrement Borer.

Q. 405. You understand German well enough,——

A. I know what he is driving at off hand, I don't care to translate it with accuracy.

Q. 406. He speaks of its use by Berger and Rust, and they
65 recommend it highly. Do you agree with that or not?

A. I do not.

Q. 407. You think you are a better authority on that then the German authors?

A. I do, I have worked with it.

Q. 408. Do you know whether he worked with it too?

A. I do not.

Q. 309. You know your own department uses it a great deal of the time anyway?

A. For rough work, where we don't want to cut the tree down, we use it ordinarily for rough work, but not for accurate work.

Q. 410. If a man will exercise and take time and get a nice well rounded tree, it is pretty accurate, is it not?

A. A well rounded tree, I don't think it is, find a well rounded tree, accuracy,—if you ask my reason, I will give it. You have not asked my reason yet.

Q. 411. Well, tell why it is not?

A. Because trees grow unevenly, none of them add growth equally on all sides, owing to the presence of other trees nearby and even the presence of a hillside.

Q. 412. Now, suppose you take a number of trees in a vicinity which show the same results, is not that practically conclusive evidence that the borer is correct?

A. Yes sir, if such a thing could happen, yes sir, but it wouldn't all do that.

Q. 413. How do you know?

A. I have been with men who used them. Dr. ~~Weer~~ was under me working constantly on work of that kind.

Q. 414. How many days all together have you spent with those borers in all your work?

A. Six months.

Q. 415. Right along by the side of them?

A. Yes sir.

Q. 416. You never used one of them yourself?

A. No sir, I am fifty years old, and I let the younger men use them.

Q. 417. And you examined them for six months?

A. I saw them. The other fellow- do that. I let the rest do that, the men under me.

Q. 418. Did you in one single instance ever know of the borer to tell a falsehood, did you ever catch it in a falsehood?

A. I said I hadn't used them myself.

66 Q. 419. You said you examined samples for six months; state whether or not you ever saw where an Intrement Borere told a falsehood?

A. Yes sir.

Q. 420. Tell where and when and what it was about?

A. Dr. Weer has taken samples of trees with Intrement Borers and then cut them down and found the samples did not show a representative growth of the tree at all, because it happened to cut in the side that wasn't a representative growth of the rest.

Q. 421. Where was that, and did you see it done?

A. I did not see that particular thing done.

Q. 422. You don't know anything about it, except what he told you?

A. Hearsay evidence, I consider it good because he is a man of his word.

Q. 423. How many times was that done?

A. I don't know. I was not doing that for Government suit, or it would have been done differently.

Q. 424. How many times did that happen?

A. I don't remember. I know it has happened enough that we don't consider it accurate. We have since been cutting the trees down systematically and take sections from the trees at the butt, then four feet higher, and four feet higher clear on up.

Q. 425. Now, here we will suppose is a tree that has grown irregularly, more on one side than on the other, will not the borer show exactly the relative growth, regardless of the tree?

A. It will for that particular spot, that particular side of the tree the borer happens to go in on. You could go all the way around the tree, but you had just as well cut it down.

Q. 426. But don t you know that will show the relative growth of the rings, of course, showing more growth on one side than on the other?

A. Yes sir, it will show, if you bore enough holes, but if you do that, you had just as well cut it down in advance.

Q. 427. Suppose a tree just naturally grows more on one side one year after another, now why will not the borer show on which side it is growing the most, relatively, I mean between the

67 several years, will it not show accurately each year how much it grows?

A. It will show fairly accurately at each spot, but if you should lose the bark from the end of a section, you wouldn't know where the end of the section was, which was the inner or outer end, the Intrement Borer taken out, and if the bark was to lose off you wouldn't know which was the outer end or inner end.

Q. 428. Suppose you kept the bark, would you know?

A. Yes sir, you would know the growth of the tree for that particular side of the tree.

Q. 429. Now, suppose one has made a tree growth in sections by blocking out of tree, by taking blocks from a number of trees widely scattered, and having borings from quite a number of trees

in other places, and also observing cross sections of trees, and they should all be uniform, or practically uniform in the rings of those various trees, showing that the growth was stunted in 1905 or 1907, that they remained stunted until 1912, and you knew it also to be a fact that in 1906, the stack of the Tennessee Copper Company was increased in height to 325 feet, and that these blocks and borings and cross sections were taken from trees within the acute zone of injury you have mentioned, don't you know that from such a state of facts, that the elevation of that furnace was the cause of that decreased growth?

A. No, because you have not taken all the factors into consideration.

Q. 430. I didn't say a word about any other factors, I put to you a theoretical question,——

A. I will say no.

Q. 431. Wait until I get through. Under the facts stated now, that is, suppose that you know only this, that the examination of these blocks and borings and crossing sections have been made within the acute zone you have spoken of, and they show there was a stunting of the growth beginning in the year 1905, and you further know that the stack of the Tennessee Copper Company was increased in height in 1906, wouldn't that be evidence to you that the increased height of the stack was what caused the stunting of the growth?

A. No, not until I had investigated other factors?

68 Q. 432. Then those facts wouldn't have any bearing whatever on your mind?

A. Not in my final conclusions.

Q. 433. I didn't ask you for a final conclusion. Wouldn't it be any evidence at all to you?

A. Yes sir, in part, but I wouldn't base a conclusion on that evidence finally until I investigated further.

Q. 434. Just state what those other factors you are talking about are, which you would take into consideration?

A. The rainfall in that particular country from year to year. A tree grows more when it has plenty of rain than when it has not. I would have to also know the rainfall from year to year. The smelter fumes are not uniform, they go out and injure a tree in one place, and next year they don't injure that tree, go out in various directions. I could pick out trees that never had any injury last year, and then the previous year, you could tell by the foliage. I could go out then on the other hand, and pick out trees that have been injured the past few years.

Q. 435. I didn't ask you anything about,——

A. You asked me why, that is why.

Q. 436. I didn't ask you anything about anybody,——

A. I would be afraid that evidence could be manufactured that way, and I would want to protect myself.

Q. 437. Do you mean that you would manufacture evidence?

A. No, but other people could.

Q. 438. I didn't say anything about that, I said suppose you go

through a forest as an honest man, taking the trees generally as they come, trying to pick out the most exposed places, and find that to be the results?

A. Leaving out my allusions to crooked work, unless I knew whether there had been smelter injury there, I couldn't pass on it.

Q. 439. But if it shows a stunted growth generally throughout the entire forest in that acute zone during the year 1906, immediately thereafter, beyond what it was before, wouldn't you at-
69 tribute it to that cause, that is the raising of the Tennessee Furnace stack?

A. I would if the sections were taken as a whole, and they showed it and I knew it was not caused by decreased rainfall or by the fact that it had escaped the smelter fumes, but I would not be satisfied until I was sure about the other factors.

Q. 440. You don't know whether there was less rainfall in 1906, 1907, and 1908, and previous to that time?

A. I don't know.

Q. 441. You never heard any such things intimated?

A. I don't know anything about the rainfall.

Q. 442. There was less rainfall in 1913 than ever known in this country?

A. I don't know anything amout the rainfall, I have not investigated it.

Redirect examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. Doctor, you were asked about who suggested to you where you should go on last Friday and Saturday, I will ask you when was the first time you saw the lawyers in this case who represent the State of Georgia, and talked with them?

A. Last night.

Q. 2. I will ask you whether or not you have selected every sample you have offered in this case, before we saw you?

A. I did.

Q. 3. We did not know where you got them, or suggested anything about them?

A. Mr. Johnson assisted me in getting the things ready, I had them ready.

Q. 4. You were introduced as a witness to-day and you had all these specimens ready?

A. Yes, sir, I didn't know what was the name of the lawyer until you came here and registered.

Q. 5. Now you were asked the hypothetical question by General Fowler that if the acid was taken out of the smoke at Ducktown, or eighty or eighty five per cent, I will ask you from your observation by seeing it and smelling it, whether or not there was enough sulphur dioxide in that smoke to injure plant life?

A. I should say there was.

70 Q. 6. I will ask you one other question, if the time of the year trees might be injured or stripped of their leaves, would that have much to do with the injury that would result to that tree?

A. It would.

Q. 7. So if they were stripped off when the first leaves came out, the first of June, if the leaves were taken off, what would be the effect compared to stripping them off about the time frost come?

A. Stripping them off about the time of frost wouldn't have very much effect on the trees. Stripping them off in the early part of the season when the tree is in bloom, it would have a great deal more effect.

Recross examination.

By COUNSEL FOR DEFENDANT:

Q. 1. How much sulphur dioxide in that smoke you smelled down there?

A. I didn't analyze it, I don't know.

Q. 2. Your nose don't enable you to state how much sulphur dioxide there is in smoke?

A. My nose is very sensitive, it is a trained nose, I have been smelling fungii diseases on trees and plants a great deal, and I know the odor of fungi.

Q. 3. Is that one of your methods of investigation, smelling?

A. No, not one of my methods of investigating.

Q. 4. Now, as I understand you, you don't pretend to know much about the smoke itself?

A. Chemically I do not.

Q. 5. You don't have the least idea of what per cent of sulphur dioxide there was in that smoke?

A. I do not know the per cent in it. I have not qualified as an expert along that line.

Q. 6. Just one or two times you say you have smelled sulphur dioxide in the smoke?

A. Yes, sir, every time I came in contact with it.

Q. 7. Didn't you testify on cross examination that on one or two occasions you were near the furnaces of the Ducktown Copper Company and smelled this copper fumes in the smoke? That was within a few hundred yards of the furnaces?

71 A. Yes sir.

Q. 8. You don't undertake to say what per cent of sulphur dioxide was in the smoke, do you?

A. No, I could not say unless I analyzed it.

Q. 9. You don't say that if any plants had been growing where you were standing that the smoke would have injured them?

A. Yes, sir, I do.

Q. 10. Are you swearing that positively?

A. I swear positively that the copper smelter fumes has odor in it, it is injurious.

Q. 11. Do you state positively that every time you detect sulphur smoke odor it will kill plants?

A. Yes, sir, you can smell it when less than one part in a million, and that will injure plants.

Q. 12. Don't you know you cannot smell it when there is l than that amount?

A. No, I don't know that I can, I have never seen that det mined, that is a chemical measurement of it.

Q. 13. Have you ever made any experiment yourself about wh per cent of sulphur dioxide it takes to injure plants?

A. No, sir, because Dr. Haywood does that kind of work?

Q. 14. You have not made any experiments at all?

A. No, sir, not with gases.

Q. 15. Don't you know that experiment is based on placi plants under a receptacle of some kind that contains that mu sulphur dioxide in solution.

A. Either that or upon plants put in a green house.

Q. 16. That is where they have a continuous application on t plants?

A. A continuous application for a definite period.

Q. 17. You know that condition is entirely different when is out in the open atmosphere?

A. I don't know that it is entirely different.

Q. 18. I am going to read to you from an affidavit filed in th case by Dr. Fernow, and ask you if you don't think he is telli the truth about it?

By COUNSEL FOR PLAINTIFF: We except to the reading in e dence, any statement of Dr. Fernow, because it is not given in th case and the paper speaks for itself.

72 Overruled. Appeal prayed and granted.

"In strange contrast to these practical figures is the sta ment of authorities (Schroeder and others) that one part in a hu dred thousand inflicts great injury, and that even one in one m lion is injurious. The strangeness vanishes if we investigate t basis for the assertion. It is based upon laboratory experime which in no way, physically or chemically represent conditions the open air. These chemist overlook that the plant in these e periments is deprived of defense by removal from the natural co ditions of its functions; that sulphurous anhydrid in the naste state, as employed in these experiments, is much more highly co rosive than the same substance under the conditions in which it found in the fumes, and that much of the sulphur dioxide traveli through the air is changed into the less active trioxide."

Q. 19. Are those things true?

A. They are not.

Q. 20. What is it that is not so?

A. Dr. Fernow is giving his personal opinion, I do not agr with him.

Q. 21. Tell me what part of that statement is false?

A. The assumption that he has got entirely different conditio in a greenhouse than outside?

Q. 22. Is it not true?

A. No.

Q. 23. Don't you know that it is different?

A. No, I don't know that it is.

Q. 24. Don't you know that in a greenhouse that the plant remains continuously in contact with it, there being no air currents.

A. No, sir, there are currents, even in bell jars, that has been proven.

Q. 25. Now, if the whole atmosphere inside of the hothouse or your bell jar, contains this sulphur dioxide, would it not be different from what it is outside?

A. It would be somewhat like the conditions outside where there are alternating currents.

73 Q. 26. But on the outside, they have one movement of atmosphere and the next moment none.

A. The next moment they will have atmosphere and it will be different in amount.

Q. 27. What would be the difference in the application of the two, wouldn't there be a difference?

A. Be a difference between a constant application and a moving application.

Q. 28. Is it not also true that sulphur dioxide traveling through the air is changed into trioxide?

A. Yes sir, also true that nasent gases inside of one of those chambers such as Dr. Haywood uses, would also be changed to a certain extent to trioxide, that is the reason why I don't agree with Fernow.

Q. 29. Did you ever try that?

A. Fernow is no smelter expert.

Q. 30. Are you, I believe you swore you were not?

A. I have not sworn I was or was not.

Q. 31. Are you?

A. I am a plant pathologist, I study the diseases of plants.

Q. 32. Let me read a little further.

By COUNSEL FOR PLAINTIFF: We except to that reading and that class of evidence as incompetent and immaterial and in no way illustrates the issues in this lawsuit.

Overruled. Appeal prayed and granted.

"Stoeckhardt's Experiments, on the other hand,——"

Q. 33. Do you know Stoeckhardt?

A. I know his work.

Q. 34. Is he a good authority?

A. In some ways, and in other ways,——

Q. 35. On this thing, is he recognized as an authority?

A. He is recognized by the smelter people as an authority, I believe Dr. Fernow is also.

Q. 36. Are you especially biased as to the smelter industry?

A. No, but I don't care about the evidence of some of those men.

Q. 37. What is it you have against the smelter industry?

A. Nothing against them.

74 Q. 38. Well, why do you reflect on these other people because you say they are authority for the smelter interests,

what evidence have you given that is in favor of the smelter interests?

A. I cannot say, because I don't remember now, have some things that I can remember.

Q. 39. Do you say he is not a recognized authority on this subject?

A. By whom?

Q. 40. By you and other scientists?

A. I don't recognize him as as good authority as some others.

Q. 41. Tell me one man you recognize as an authority?

A. Sourroer is a pretty good authority—I don't agree with him, he is fairly good, I don't agree with every man just because he is a good authority. If I have studied the subject and think they are wrong I don't agree with everything they do, because they are noted men.

Q. 42. Then as I understand, you don't agree with anybody, you have your own ideas and don't agree with the ideas of anybody else, is that it—you are an authority unto yourself?

A. I don't agree with anybody—is that the way you put it?

Q. 43. Yes sir.

A. No, I will not answer that in that form—that personally reflects on me.

Q. 44. No sir, not a bit.

A. They have some works that I agree with and some works that I don't. Just because they are noted men don't cause me to agree with them in everything. I don't disagree with all men.

By Counsel for Plaintiff: We except to any further examination along that line as irrevelant and incompetent and not pertaining to this case. I think the question has been fully elucidated.

Overruled. Appeal prayed and granted.

Q. 45. I will now read to you what Prof. Fernow said.

"Stoeckhardt's Experiments on the other hand, showed that deciduous trees, treated in a covered glass, i. e., under conditions
75 unfavorable to the plant, with a mixture of one in fifty thousand for weeks had no effect whatsoever, and even stronger mixtures, one in thirty thousand and one in twenty thousand repeatedly applied had no effect."

Q. 46. Is that so?

A. I do not know, I will not accept his statement of that, or Dr. Fernow, what Dr. Fernow has given there. I refuse to pass any opinion on what Dr. Fernow says or anybody says.

Q. 47. Do you know as a matter of fact whether or not a mixture of one in fifty thousand when applied for weeks will have material effect on deciduous trees?

A. I do not know from my own experiments, I have not experimented with it any.

The next witness, H. L. JOHNSON, having first been duly sworn, deposed as follows:

Direct examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. What is your name?
A. H. L. Johnson.
Q. 2. What position do you hold?
A. Forester.
Q. 3. In whose employ?
A. The United States Forestry Service, Department of Agriculture.
Q. 4. Where are you stationed?
A. At Etowah, Tennessee.
Q. 5. What is your age?
A. Thirty one years.
Q. 6. How long have you been engaged in the study and work at which you are now employed?
A. Since July 7th, 1907, I begun the study of forestry.
76 Q. 7. Have you graduated from any college of Forestry?
A. I graduated from Yale Forest School, in 1909, in June.
Q. 8. How long have you been in the service of the United States Government?
A. Five years, on the 1st of July, 1914, I finished my fifth year.
Q. 9. What are your particular duties in Tennessee now?
A. I have two division- of the survey of lands which we are purchasing, also supervision of the examination and valuation of the lands which we intend to purchase, and in addition to that I have administrative work in connection with the acquired lands.
Q. 10. By whom were you ordered to take part in this case?
A. I was ordered to come here by the Assistant in the Department of Forestry, Mr. Reed. I had a letter from him to me, he gave me the correspondence in the case and directed me to act in accordance with that correspondence.
Q. 11. Do you know Dr. Geo. W. Hedgecock?
A. Yes sir.
Q. 12. Did you accompany him on certain trips he made in North Georgia recently?
A. Yes sir.
Q. 13. Were you present when he took samples you have seen him introduce?
A. Yes sir.
Q. 14. Are you familiar with the forests in North Georgia in the district which has been described as the zone of acute injury surrounding the Ducktown smelter works and the Tennessee Copper Company's smelter and works?
A. The only intimate knowledge I have of those forests in North Georgia is confined to what I saw on the trip of Saturday of last week—Friday and Saturday of last week, while with Dr. Hedgecock. In addition to that I have some actual knowledge of conditions along

Jack River in Georgia, for four months in the winter of 1912 and 1913, I was working there with E. B. Clarke, when we purchased the area which is now under his charge, which lies southeast of here, we acquired from—which lies southeast of here anywhere from twenty five to thirty five miles. I have a very good knowledge of conditions there, because I was engaged in this examination
77 and valuing of the soil and timber on those lands.

Q. 15. Is that within or without the area discribed by Dr. Hedgecock as the zone of injury, with relation to the Ducktown Sulphur, Copper & Iron Company?

A. It is outside of the three zones described by him, that is to the best of my knowledge. I would prefer to substantiate that by exact location.

Q. 16. With reference to the forests of North Georgia, just south of the Georgia line, state whether or not in your opinion, those forests are normal or sub-normal condition?

A. They are not normal.

Q. 17. What is the condition?

A. I will confine myself to the ground I covered with Dr. Hedgecock.

Q. 18. What ground did you cover, approximately stated, just state the points to which you went?

A. We went over the main wagon road from Blue Ridge to Copperhill, also went to Epworth, Georgia, we went from Epworth on one trip through Madola, also went through a little place called Pierceville, On Friday I should think we covered something like fifty miles, most of it in Georgia. On Saturday we traveled perhaps something like sixty or sixty five miles, principally on the Georgia side.

Q. 19. Where did you go on Saturday?

A. On Saturday we left here with John Vestal who came after us in an automobile and took us to Epworth, where we found J. P. Vestal, his father. We took him with us, I was with Dr. Hedgecock and Mr. Clarke, five of us, and went from Epworth out through Madola to a farm house of a Mr. Barnes, then went up on Barnes Mountain. We took Mr. Barnes and went up on the lead known as Barnes Mountain, which comes off the long Mountain known as Mule Top, comes off in an easterly direction, and spent about two hours up there.

Q. 20. Did you go to Granny Marr Mountain?

A. Yes sir, in the afternoon of the same day.

78 Q. 21. And all the section between what you covered,—between Mule Top and Granny Marr and Barnes Mountains?

A. On the road, yes sir, but not through the woods.

Q. 22. Judging by your travels to that section, state what is the condition of the forests in that district?

A. Well, I would say it was abnormal, I would say that as to injury.

Q. 23. Taking into consideration the proximity of the Ducktown Copper Company and the other company of which you are

aware, to what would you attribute the injury to the forests just south of the Georgia line?

A. To the best of my knowledge and belief it has been caused by smelter fumes, sulphur dioxide.

Q. 24. Mr. Johnson, have you ever done any stem analysis?

A. Yes sir.

Q. 25. I hand you, Mr. Johnson, Exhibit No. 66 to the deposition of Prof. Bain, who testified for the defendant. I will ask you whether or not you can judge as well from that piece or section of tree as to the annual growth of the tree as you could from an entire cross section of the stem?

A. No, not as well as from an entire cross section.

Q. 26. State whether or not the annual rings are uniform in plants or trees entirely around the tree?

A. They are not, that is if they are it is an exception to the rule.

Q. 27. As a general rule they are not?

A. As a general rule they are not symmetrical.

Q. 28. Are you familiar with the instrument known as the Increment Borer?

A. I am.

Q. 29. Did you ever use it?

A. I have.

Q. 30. Give your opinion of the use of the Increment Borer as an accurate method of determining the annual growth of trees?

A. I used it in the summer of 1907 under the direction of a man who was then Prof. Gross, now a Forester in the employ of the United States Government. The results we got in Milford. Pennsylvania, were not satisfactory. In Pike County.

79 Q. 31. Are you familiar with the use of that instrument in Germany, from personal cmfw shr

A. I know it is mentioned on the forest work, used in the work in the forests. I refer to Schlieck's Manual, it is described there.

Q. 32. State if there is any more successful *to* use in the forests of Germany, and why it is more successful?

A. I cannot state it is more successful in Germany than it is here.

Q. 33. I say, if it is.

A. I can state what I consider a good reason, it is as follows: The German and France Forests, I will confine myself to the German forests, have been under improvements, that is they have received attention in their production. In some cases for over three hundred years. Some of those forests have been produced by artificial planting, and the trees are of uniform size, planted a uniform distance apart and have large growth records, and are of more uniform character. The result is that those trees under that attention, produce a good uniform form of the tree. Now those trees would be more systematic, in other words, the pith in the center of the tree would be located nearer a geometrical center than the trees growing in virgin forests as they do in America. That system of production produced by uniform conditions of light and space,

the production has been controlled by those conditions and they make a more uniform tree and growth.

Q. 34. State whether or not the protection which a tree receives, preserving the shape, the life and shape which it receives, and similar conditions have to do with the growth in one direction or another?

A. It is generally believed, and is my belief also that those conditions do affect it.

Q. 35. Can you tell anything from a section of a tree unless you have the height or core of the tree, accurately?

A. You say tell anything, what do you mean?

Q. 36. As to the growth of the tree, the starting point
80 from which to make your calculations?

A. Yes sir, you can trace the growth history of the tree for the part which you have.

Q. 37. For that portion of the tree which you have?

A. Yes sir.

Q. 38. Can you trace it for the entire growth of the tree?

A. That would be largely a matter of speculation. You couldn't tell what had happened to the part you didn't have.

Q. 39. What effect upon the forests as a whole, does defoliation of trees have?

A. It affects the forests in a great many ways, it not only affects the growth of a few trees, or of an individual tree, but affects the entire balance of the forest growth. For instance, the less shade you have, it will effect the soil moisture, in forests it is always attempted to keep the ground shaded and to allow the litter and humus to accumulate, that is a natural fertilizer in a forest, and if the trees are depleted or destroy the leaves, it lets the sun in and dries the ground out and makes it subject to fire, and it is a well known fact, that will result in decreased growth or amount of wood that is produced.

Cross-examination.

By COUNSEL FOR DEFENDANT:

Q. 1. Mr. Johnson, how long have you been located at Etowah?

A. I came to Etowah the 15th of July, 1913.

Q. 2. Did you have charge of the land which the United States Government bought from the Wetmore estate?

A. Yes sir.

Q. 3. How long has it been since they were purchased?

A. They have not yet been purchased, the purchase agreement betwen the Secretary and Wetmore people has been signed up, the deeds have not passed yet.

Q. 4. The price and terms of sale have been agreed upon?

A. The purchase contract has been drawn between both parties, to the best of my knowledge.

81 Q. 5. How many acres of those lands is the Government to purchase?

A. Of the Wetmore property?

Q. 6. Yes sir, of the Wetmore property?

A. Allow me to refer to my map. (Looking at map.) This acreage was not determined by careful survey, but simply by computing the number of sections and parts of section, assuming the average size to be 640 acres. It is very close, within 200 acres, anyway. The Wetmore lands, known as the Ocoee Timber Company, 33,600 acres.

Q. 7. How near do those lands lay to this Ducktown Copper Company's plant?

A. Do you want the average distance?

Q. 8. No, I want the closest?

A. To Ducktown?

Q. 9. Yes sir.

A. I will give the distance from the Isabella Mine to the lands we have under purchase contract—five miles as near as I can scale it.

Q. 10. How near is the closest lands to the Tennessee Copper Company? That is to Copperhill.

A. The closest purchase under purchase contracts is four and one half miles as near as I can scale it from Copperhill.

Q. 11. Do you know that Wetmore had a suit pending for some time against these companies for alleged damage to their lands?

A. If I had heard it, I have no recollection of it.

Q. 12. Then you don't know they had a suit and dismissed it?

A. No sir, I say if I ever heard it I have no recollection of it.

Q. 13. Did you make an examination of the timber on the Wetmore property before it was purchased by the Government?

A. Not personally, Rosser had charge of the field party. I was with him on several occasions while the examination was going on, several days.—perhaps ten days all together.

Q. 14. Is it on account of the intended purchase by the Government, that the Department of Agriculture has asked you and Dr. Hedgecock to testify in this case?

A. I cannot say. It is merely a matter of supposition, I am here under offic-*la* orders from my superiors, is all I know about it.

Q. 15. You know that, you know that the Government has purchased large areas of land in the vicinity of these copper
82 plants, and your draw your conclusions from that?

By Counsel for Plaintiff: We except to that question as calling for a conclusions.

Overruled. Appeal prayed and granted.

A. I have not drawn any conclusions.

Q. 16. None at all?

A. No sir. I have no conclusions in the matter yet.

Q. 17. Then you have no suspicion as to why you are here?

By Counsel for Plaintiff: I except to that because irrelevant and immaterial, and for the further reason he has already answered the question that he has reached no conclusions.

Overruled. Appeal prayed and granted.

Q. 18. You don't know of any other reason why you should be brought here other than the Government is personally interested in the matter?

A. That might be a reason.

Q. 19. Do you know of any other?

A. No sir, I don't know of any other reason. I might suspect one, but I don't know of any other.

Q. 20. Now, Mr. Johnson, you stated that the condition of the forest through which you and Dr. Hedgecock traveled the other day was not normal, in what respects was it not normal?

A. Well, the foliage for several miles was so short brown and red,—we passed one place where some scarlet oak had shed at least two thirds of the leaves, and the leaves covered the ground in the road under the trees.

Q. 21. How many oaks were in that condition?

A. At that point I think two or three standing right along the side of the road.

Q. 22. Were they the only ones you found in that condition?

A. The only ones that were so nearly defoliated.

Q. 23. In all those miles which you traveled you just found two little scarlet oaks?

A. I didn't say little.

Q. 24. How big were they?

A. Sixty to seventy feet high.

83 Q. 25. How big at the butt?

A. Probably seventeen inches.

Q. 26. You found two oaks in all those miles from which two thirds of the leaves had fallen?

A. Yes sir.

Q. 27. Did you find any other trees at all from which any leaves had fallen?

A. I couldn't say positively, a good many leaves were on the ground, I couldn't say whether they came off recently or not. I did see other trees from which twenty to thirty or forty per cent of the leaves were badly browned and scorched.

Q. 28. Will you swear here that was done by the copper fumes?

A. To the best of my knowledge and belief. I am not an expert in pathology. If it was done by smoke I don't know what could have done it, no evidence of fire, no evidence of insects. There had been no fire so far as I could judge within three or four or five years, possibly longer.

Q. 29. It has been an exceedingly dry season*m* has it not?

A. Not since I have been here. I came here Friday at noon.

Q. 30. I am speaking about before last Friday, don't you know it has been an exceedingly dry season through this section here?

A. No sir, because I have been stationed at Etowah and I have not been in the State of Georgia since the 26th of May, 1913, except to go to Alaculsa, Georgia.

Q. 31. Don't you know there was hardly any rain during the whole summer season?

A. No sir. Mr. Clarke is the only person I have heard from here,

nd he does not write me very often, nor does he write me about the veather conditions.

Q. 32. Is it not true that dry weather will cause the leaves to rown and look scorched?

A. Sometimes.

Q. 33. Don't you know you have seasons from time to time luring particularly dry seasons, especially in the fall, that trees vill give every appearance of having died from drought?

A. How late in the fall?

Q. 34. Well, from August, any time during the dry season?

A. From the end of August I wouldn't attempt to distinguish he orninary ripening color of the leaves, I wouldn't attempt to distinguish the natural appearance from the appearance that 4 resulted from drought.

Q. 35. Have you not seen quite a lot of timber give every vidence of being dead as a result of drought?

A. Not in this region, not in the Southern Appalachians.

Q. 36. Have you elsewhere?

A. Yes sir.

Q. 37. Where?

A. In Connecticut.

Q. 38. But I understand you to say you don't profess to be an xpert in the poisoning of trees?

A. No sir.

Q. 39. This is the only opportunity you ever had for giving ny attention to the ef-ect of sulphur fumes on forests?

A. No sir, I had one opportunity better than this.

Q. 40. When was that?

A. The last week in September of 1913, I made a trip with Dr. edgecock from Ducktown south down the Ocoee River to Parksville, on the Ocoee River.

Q. 41. I didn't really mean that, what I mean this is the only ction in here you ever had opportunity to study the effects of lphur fumes on foilage?

A. It is.

Q. 42. Now, you investigated more or less forests down in a nited part of North Georgia, I believe you say, outside of this zone damage?

A. I was located on the river southeast of Blue Ridge twenty to irty or thirty five miles.

Q. 43. Didn't you go through those forests and examine the trees some extent?

A. Yes sir, that is what I was there for.

Q. 44. You found dead trees all through there?

A. A very few.

Q. 45. You found dead trees?

A. I found trees dead from old age.

Q. 46. You found trees that were dead, that hadn't died from age?

A. I have no definite recollection of a single one.

Q. 47. You didn't find any dead trees on this trip?

A. Yes sir, found a good many white top trees, some of which were entirely dead, and others having the top killed out.

85 Q. 48. Those trees, you say, were killed in the top, spike top, have been that way six and eight years?

A. I don't know.

Q. 49. They presented every appearance of having been in that condition many years, didn't they?

A. I couldn't say whether it was done one year or ten years, only be a guess on my part, by examining the twigs. If the tops were decayed and the smaller twigs and limbs had dropped off, I would judge it had been deal longer than if it retained the smaller parts.

Q. 50. How can you testify as to when that damage was caused?

A. You mean the spike tops?

Q. 51. Yes sir.

A. In fact, I had not considered it, I might go out with that in view and make a guess at it, that is all I could do.

Q. 52. Now, in regard to the Inrement Borer, you don't undertake to say that is of no value at all in determining the growth of a tree, do you?

A. I consider it of very little value in America in the virgin forests, where we have what is called normal forests produced by planting of trees, where we have systematic and even chance, trees of that kind, the Intrement Borer would be used. But where trees are planted we would know the age of them.

Q. 53. Suppose you go through a particular part of the mountains and carefully select your trees, is there any reason why that tree does not grow with reasonable regularity all around?

A. If it has not been,— that will depend on condition of light, and the crowding by other trees.

Q. 54. Will not crowding over in Germany have the same effect as here?

A. Yes sir, but they are not crowded there.

Q. 55. How do you know?

A. They have been under improvements for three hundred years.

Q. 56. Have you seen one?

A. I have seen photographs.

Q. 57. How close do they grow together?

A. They start them, depending on the species, the spruce is four feet each way.

Q. 58. Don't you think that would be crowding the spruce?

A. Not when the spruce is ten inches high, when they

86 are planted.

Q. 59. They grow higher than that?

A. Yes sir, and as they grow they take out every other one.

Q. 60. Did you ever see any forests thicker than that?

A. Planted forests?

Q. 61. No, natural forests.

A. Yes sir.

Q. 62. Where?

A. In the Adirondack Mountains in New York State, and also in Maine and Mt. Mitchell, North Carolina.

Q. 63. They were extraordinary forests?

A. No sir, there had been a heavy seed crop with unusual favorable conditions for germination, came up as thick as they could grow.

Q. 64. I am asking about good sized trees?

A. Good sized species are twenty feet high. If you see forests of spruce growing closer than four feet to each other, I have seen them as close a- four feet.

Q. 65. Do you know as a matter of fact in Germany the forests they cultivate there, plant them just as close together as they can?

A. I do not, I beg to differe with you.

Q. 66. Don't you know they conserve their forests to the very greatest extent, and conserve their space as much as they can in the cultivation of their forests?

A. I don't agree with you at all, if you want to know what I know about it.

Q. 67. Well, what you know is hearsay?

A. I have seen photographs.

Q. 68. You didn't see them taken.

A. It is not probable they would fake that up.

Q. 69. Probably not, but you never was there and looked at the forests?

A. I have friends who have been there.

Q. 70. How many times did you ever use the borer, you say it is not of much value, let's find out whether it is or not?

A. I used one part of three days.

Q. 71. That is all the experience you ever had with it?

A. That is all.

Q. 72. And upon that you condemn it?

A. Yes sir, I do.

87 Q. 73. When the borer has been used for man- many years?

A. I have not used it many years. I don't condemn it in Germany. I never used it there.

Q. 74. Then you condemn it all over the United States because you used it in one place three and one half days?

A. I condemn its use in virgin forests in America.

Q. 75. Because it was unsatisfactory to you when you used it three and one half days?

A. I do.

Q. 76. You think that was sufficient experience for you to condemn anything as to its use?

A. As far as I was concerned it was.

Q. 77. Is that the way you do scientific work, you condemn anything when you use it three and one half days?

A. That was sufficient for me.

Q. 78. What was the trouble?

A. Just as I stated heretofore, the reason the growth is not regular and not systematic.

Q. 79. Tell me what you did with that borer during the three and one half days?

A. I probably took out fifty or sixty cores.

Q. 80. Did the cores show conditions that you found to be false?

A. I cannot say they did. For one thing I remember the instrument came to be mechanically defective, couldn't get the cores out with any certainty. We didn't get any cores more than two inches long.

Q. 81. Then you condemn it directly because you didn't get the core?

A. Partly that, partly mechanically defective and partly because the cores did not show average conditions in the stem.

Q. 82. Now, did you make a single experiment of this kind, take out a core and examine it and then cut the tree down and compare the cross section of the tree with the core, did you do that?

A. Yes sir.

Q. 83. How many times?

A. I think my party cut four or five trees.

Q. 84. Was there any difference between what you saw was shown by the core and that shown by the cross section?

A. The cross section at the point where the core was taken, of course, corresponded, but the other side did not.

88 Q. 85. In how many instances did that happen, that they didn't correspond elsewhere?

A. In a majority of cases, out of five trees cut, I would say four of them did not correspond, just about one tree out of five.

Q. 86. That is it showed accuracy of the relative growth where the core was taken out, is that so.

A. Yes sir.

Q. 87. But that tree had been growing irregularly, as I understand?

A. Bigger on some sides than on other.

Q. 88. But wouldn't the core taken out of either side have given exactly the same history of the relative growth for the same years?

A. No sir, not necessarily.

Q. 89. Did you look to see?

A. I saw that it didn't do so.

Q. 90. Will you swear here that the core taken from one side didn't agree so far as the relative growth of the years are concerned?

A. In some cases it did.

Q. 91. In how many cores did that occur?

A. I have no definite recollection. But I will say that it occurred in a majority of cases, in at least two out of the five.

Q. 92. So that those experiments that you have explained here, having cut down five trees and compared them with the borer, you condemned the borer?

A. That is my own personal knowledge. In addition to that I

have the information of other parties and that is the general conclusion arrived at.

By COUNSEL FOR DEFENDANT: We except to the witness' answer.

A. I had already answered it, I just want to furnish what he asked for, and nothing more.

Q. 93. You say that you are willing to swear with the limited knowledge that you have, that it is of no value at all?

A. In my estimate, I cannot form an opinion for other people, but to the best of my knowledge and belief it is not.

Q. 94. It is used in your work?

A. No sir, I have never seen it used, it may be used. I
89 have not been present when it has been used.

Q. 95. Then you don't know much about it.

A. The other method for determining the growth is much more accurate?

Q. 96. What is that?

A. The stem analysis.

Q. 97. What is that?

A. Cutting the tree near the ground and making sections at uniform distance, generally every eight feet.

Q. 98. But if you are trying to examine the timber on another man's land, you cannot do that?

A. In Pennsylvania we were able to do that because a man named Guinn was willing for us to do that. We were willing to pay him for cutting his timber, and so we did it. That is one case.

Q. 99. Is that the only case you ever knew of being pursued?

A. No sir.

Q. 100. Where else?

A. In Arkansas National Forests in Arkansas.

Q. 101. How did that happen?

A. Mr. James, who makes a specialty of that work was sent there to make some volume tables for different species, short leaf pine and also some oak. I didn't assist him, but saw him at work and knew what he was doing.

Q. 102. How many trees did he cut to the acre?

A. He got his information from Government timber sales, where the timber had been sold and was being cut by the mill men.

Q. 103. So those are two instances you have known of where that method was pursued?

A. Yes sir.

Q. 104. Is it not a fact that between here and Ducktown the lands have been cut entirely over, almost entirely, and the growth is nothing but sapplings.

A. Do you mean in Georgia or Tennessee?

Q. 105. In Georgia.

A. No sir, I wouldn't describe the conditions that way.

Q. 106. How would you describe it?

A. As culled forests, where the better trees have been culled out on most of the land, still a good deal of merchantable timber there.

Q. 107. Don't you know that for a distance of five or six miles from the State line that it has been nearly all cut out?

A. No sir, I don't know that.

90 Q. 108. How far has it been cut out?

A. I couldn't say.

Q. 109. Didn't you notice?

A. I noticed from the route we took through there, I would not describe it as cut over forest, which I call a culled forest, where the better species have been taken out, not virgin forest in any sense of the word. Neither is it what I would call a cut over forest. It does not compare with the cut over land of the Alaculsa Lumber Company and the Prendergast land.

Q. 110. For some distance this side of those furnaces, you know it is practically all cleaned off?

A. No matured trees, no trees of any kind except a few sprouts.

Q. 111. Do you know when that timber was cut?

A. I don't know it was ever cut at all, it is gone and that is all I know about it.

Q. 112. Do you know whether it was ever there or not?

A. Yes sir.

Q. 113. How do you know?

A. By the stumps.

Q. 114. Can you tell from the stumps whether it was cut or not?

A. No sir, they are too ragged. If cut many years, maybe several years, you couldn't tell whether it was burned down or rotted down, or whether the smelters had killed them.

Q. 115. Now, Mr. Johnson, suppose you take borings from a great number of trees in a vicinity, don't you think they would show more accurately the history of the growth of that forest than cross sections from just a few trees?

By Counsel for Plaintiff: We except to that question as there are no facts or evidence in this case on which to base the hypothetical question, being only three borings in evidence in this case.

Overruled. Appeal prayed and granted.

A. Please repeat the question.

Q. 116. (Stenographer repeats question.)

A. That is merely a hypothetical question.

91 Q. 117. I wan it answered that way.

A. Hypothetically I would say yes, that a great number of borings would be preferable to a few sections. I make my answer based on the hypothetical question.

Q. 118. I didn't ask you for anything else.

A. I qualify my answer that way then.

Redirect examination.

By Counsel for Plaintiff:

Q. 1. Mr. Johnson, state whether or not a number of sections would be preferable to a number of borings?

A. In my judgment a number of sections would be much more preferable than an equal number of borings.

Q. 2. Would they be preferable to a number of pieces of sections, such as the Exhibit I handed you a while ago?

A. You want to know if a complete section is preferable for that purpose?

Q. 3. Yes, sir.

A. It is.

Q. 4. Speaking of the land General Fowler asked you about between here and Ducktown, you stated that the appearance of the land, it had no timber on it, where is that land located?

A. I didn't say,—if he had reference to Georgia only,——

Q. 5. Are there not lands in Georgia that are absolutely denuded of timber, in this section of here?

A. I didn't see any except the land in cultivation, which is cleared for cultivation.

Q. 6. In lumbering it do they get all the timber from a place and absolutely denude it of all the timber?

A. Do you mean from a forest standpoint?

Q. 7. Yes, sir.

A. No, sir.

Q. 8. I believe you stated the forests in Georgia was not what you would call cut over forest, but culled forests?

A. The parts that we went over Friday and Saturday.

Q. 9. State whether or not you used the best methods in
92 the forest service, or what is supposed to be the best methods in arriving at your knowledge of forests and trees?

A. That question is so broad, if you could make it more specific.

Q. 10. With reference to the taking of borings and making examinations of trees, you use what you consider the best methods?

A. Yes, sir.

Q. 11. I believe you stated the method you used was the stem analysis?

A. Yes, sir.

Q. 12. Is that method in general use in the forest service?

A. So far as I know it is used more generally than any other.

Q. 13. You stated a while ago, I don't know whether it went in the record when asked whether or not,—if I am correct in my understanding of this part of your statement,—whether or not you condemned the Intrement Borer upon your personal experience, or from what you had heard and read?

A. Principally from my personal experience and from my observation.

Q. 14. With reference to the Intrement Borer—is it the rule or the exception for trees to be perfectly round and symmetrical in their growth?

A. Here in America it is the exception for forest trees to be symmetrical in form.

Q. 15. I will ask you to state whether or not as they grow in height and in breadth, they are thinned out, the growth rings?

A. They are thinned out, under the practice of foresters.

Q. 16. Now, with regard to the Wetmore lands, did you make an examination of them?

A. I assisted in the examination, had charge of it.

Q. 17. Have those lands been damaged or not by the copper fumes, in your opinion?

A. Certain parts of them have. There was a portion of the Wetmore lands which we are to acquire, some of them have been damaged, and others not. If they have been I cannot see it.

Q. 18. What direction are they from the Ducktown plant?

A. You mean the damaged lands?

Q. 19. The average direction of the entire tract?

93 A. Northwest, the center of the bulk would be northwest.

Q. 20. Are you familiar with the rainfall down in this section at all, the annual rainfall?

A. I have a weather bulletin,——

Q. 21. Do you know from your own knowledge?

A. No, sir, I never kept any record myself.

Recross-examination.

By Counsel for Defendant:

Q. 1. Suppose the bark is off of the end of a boring taken from a tree, can you tell which is the inside end of the boring?

A. It would be difficult. There is, however, one way, in certain species—well, in all species.

Q. 2. How is that?

A. The summer wood which is formed during the latter part of the growing season is denser and different in color from the spring wood which grows in the early part of the growing season, and in most trees the demarkation between those two kinds of wood, that is, perhaps, the way it can be noticed, and it might be possible. I don't know that I can do it, to determine which end is which of different kinds of wood.

Q. 3. Can you always tell if you put it under a microscope, from the reasons you mention here?

A. A microscope would assist in that, I couldn't say it would determine positively though.

(Thereupon the further taking of testimony is adjourned until 9:30 o'clock tomorrow morning.)

(The taking of testimony resumed on this August 15th, 1914.)

James F. Teem, F. V., being sworn to speak the truth, the
94 whole truth and nothing but the truth, testified as follows:

Direct examination—Mr. Drake:

Q. —. How old are you, Mr. Teem?

A. I will be 72 years old the 20th day of next February.

Q. 2. Where do you live, and how long have you lived there?

A. In Gilmer County?

Q. 3. Yes?

A. I have been there—I am going on 72 years old, and I have been living there ever since I was seven years old. I come to that County, when I was seven years old.

Q. 4. In what part of Gilmer County do you live?

A. About six miles Southeast of Ellijay, sorter to the left of the railroad.

Q. 5. Is there a point or a post office out there near you by which that neighborhood is known?

A. Yes, sir, Yukon, Ga.

Q. 6. How long have you been living in that neighborhood?

A. I have been living right around there all the time. I have lived where I am now living about fifteen years. I have lived right around there within three miles of there——

Q. 7. How long have you been living in that settlement?

A. I have been living in that settlement ever since the war.

Q. 8. Are you thoroughly acquainted with that county, Gilmer County, generally?

A. Yes, sir, thoroughly acquainted with it.

Q. 9. Have you seen or smelled, or seen any sulphur smoke in that community within the last few years; if so, to what extent have you seen it?

A. I have see'd it ever since I have been up where I am now; I have seen it all the time along. It has been worse this year than it has been.

Q. 10. Have you observed the effects this year upon the forest trees?

A. Yes, sir.

Q. 11. If so, what kind of trees did you notice?

A. My fruit trees; that are just about half dead; the limbs, half of them are dead; they don't look like they are going to live long; I cut down a lots of them the other day.

Q. 12. I am speaking of forest trees, such as oak and that class of timber? Did you see any effects on them?

A. I have see'd hickory and chestnuts; the chestnuts is about all dead; there may be a few hickories that are not dead.

Q. 14. This year, have you seen any smoke in there?

A. Yes, sir, plenty of it.

Q. 15. How did it appear, and where was it?

A. It was on these mountains; Turniptown Mountain and then Barnes mountain; it has been in there on the sides of the mountain.

Q. 16. Could you see it?

A. Yes, sir.

Q. 17. What sort of smoke is it?

A. It's a kind of blueish smoke.

Q. 18. Could you smell it?

A. Yes, sir.

Q. 19. How did it smell?

A. Like sulphur.

Q. 20. After it comes in there and settles down for a day or two and then the sun shines out and dispels the smoke and it leaves what is the effect on the trees?

A. The leaves sorter crisp up, on the oaks, the leaves dry up and fall off.

Q. 21. Can you describe how they look further than to say that they sorter crisp up?

A. They sorter crisp up, and turns kinder brown like sorter, and then they turn yellow and fall off.

Q. 22. What months this year did you notice smoke in there?

A. I have noticed it ever since along the first of May and April it's been in there plum on up until now.

Q. 23. Did you see it in there in May?

A. Yes, sir, plum on up until now.

Q. 24. Do you see it every day?

A. Nearly every day, only sometimes when the wind comes from the South it blows back this way, and then I don't see it.

Q. 25. How have the winds been generally, this year?

A. The winds have been mostly from the North.

Q. 26. State whether or not the winds have been from the
96 North more this year than usually?

A. Yes, sir, more this year. It has been from the North this year more than I ever noticed it before.

Q. 27. How has the smoke this year, this sulphur smoke been this year as compared with the last few years?

A. It has been to my notice the worst this year I have ever noticed it.

Q. 28. How far are you from the Ducktown Copper Company do you know where the Ducktown Copper Company's plant is?

A. I have been to McKay town, but I have never been there.

Q. 29. Do you know where Copperhill is?

A. No, sir, but I have been to McKay town.

Q. 30. Do you know how far that is from where you live?

A. No, sir, I don't know how far exactly it is.

Q. 31. Make an estimate of about how far it is?

A. I guess it is somewhere going on twenty-one or two miles.

Q. —. I believe you live six miles South from Ellijay?

A. Five and a quarter or six somewheres along there.

Q. 32. When this smoke comes in there and settles down on your apple trees, have you observed the effects, and if so, what were the effects?

A. When it settles down on the apple trees, the apples seem to get sorter scabby and fall off. The ground is covered with them.

Q. 33. Have you observed anything like that this year?

A. Every time it comes up through there it gets my trees.

Q. 34. After that smoke came up in there what was the appearance of your orchard—that your orchard you were speaking of?

A. Yes, sir.

Q. 35. What was the appearance of your orchard after this smoke would come in there?

A. The leaves would sorter crimp up and turn yellow.

Q. 36. Then the leaves fall off?

A. Yes, sir, they would fall off.

Q. 37. What percentage, I mean by that how many of the leaves have fallen off, if you know?

A. I don't know; there ain't many on the trees, but they have been falling off.

97 Q. 38. Would you say that one-fourth of the leaves had fallen off?

A. I don't know; I haven't noticed that far.

Q. 29. Are they falling off and turning yellow now?

A. Yes, sir, and the limbs look like they are dying.

Q. 40. Have you noticed the effects of this smoke on your garden truck, and if so what has been the effect of it?

A. The cabbage and tomatoes, and such as that is dying now and Irish potatoes. I ain't never got a mess out of two bushels I planted; the leaves are all falling off.

Q. 41. The bugs didn't eat the leaves off?

A. No, sir, I don't let the bugs get on them.

Q. 42. How did the leaves of your Irish potatoes appear before they fell off?

A. They sorter crimped up and then fell off.

Q. 43. Like the frost had struck them?

A. Yes, sir.

Q. 44. Was that or not good land?

A. Yes, sir, it was as good land as any man need want; real good land.

Q. 45. How much did you say you got out of two bushel planting?

A. I aint never got none yet, and I don't think by the looks of them that I will get any. Before the smoke come down in there I could make fifteen or twenty bushels of 'taters easy enough.

Q. 46. When did you observe this year the effect of the smoke on your potatoes?

A. 'Long when they come up about that high (indicating), about the 8th or 10th I think. I don't know exactly what time; I never paid no attention to it.

Q. 47. You never kept any dates?

A. No, sir.

Q. 48. Have you noticed the effects of it on your corn and peas?

A. Yes, sir, one of my sons planted a pea patch; maybe an acre or an acre and a half.

Q. 49. When?

A. Along in the Spring, and they was the prettiest peas I ever saw and then the smoke come down and killed them. They was all in bloom at that time.

98 Q. 50. How has it been for raising peas there for the last few years?

A. We raised a lot of peas before the smoke come down in there, but since it has been coming down in there, we ain't raised none worth anything.

Q. 51. Was that good land for peas before the smoke come in there?

A. Yes, sir, we could raise peas, wheat and rye. We have quit sowing *and* wheat and rye, because we can't raise it.

Q. 52. What has been the effect on your oats for the last few years?

A. I aint sowed none for the last two or three years. When the smoke commenced coming in there, I sowed wheat, rye and oats. The smoke will kill wheat in a day. It gets the oats hard. The oats was as light as straw.

Q. 53. Would or not that land have made good wheat if the smoke hadn't come in?

A. It always did before. Before that smoke come in there I would get one hundred and ninety bushels on the patch I planted, and since that I ain't made none worth anything.

Q. 54. Did you have any rye this year?

A. No, sir; wasn't no use in sowing it; couldn't make it.

Q. 55. I believe you said you had quit sowing oats?

A. Yes, sir, and quit sowing wheat.

Q. 56. On account of that smoke?

A. Yes, sir.

Q. 57. I don't believe you answered my question about the effect it has on corn?

A. The corn ain't growed off; it has just stood there and ain't growed off like it usually does.

Q. 58. What is the visible effect on corn?

A. It settles on the blades of the corn and turns it black; it will black your hands when you pull it; the fodder will be all black and black your hands.

Q. 59. What is the effect of the smoke on the corn as to its yield, etc.

A. It hasn't been yielding very much lately; I don't know exactly how much it will yield to the acre.

Q. 60. I will ask you if corn is not the most resistent crop
99 raised in this country; if the corn don't stand it better than the wheat, rye and oats?

A. Yes, sir.

Q. 61. You say that it changes the color of the fodder?

A. Yes, sir, it settles on the blades. When it first comes down it turns it white, and after it has been there a little bit it will turn it black.

Q. 62. Did you ever notice the effect on the tassels and the silks?

A. The silks turn black right straight.

Q. 63. What effect does it have on the tassels?

A. It sorter turns over and dry up.

Cross-examination by J. A. FOWLER:

Q. —. How long did you say you have lived in your country?

A. I have lived right around in that settlement ever since I was seven years old.

Q. —. I am not talking about the settlement, how long have you lived where you are now living?

A. Fifteen years.

Q. 3. Then you moved there in 1899?

A. I moved there—it has been fifteen years. I don't recollect what date I moved there, or the year.

Q. 4. You have lived in that immediate neighborhood for sixty years?

A. Yes, sir, I have been living in that settlement right around there ever since I was seven years old, and I am now going on seventy-two.

Q. 5. How far have you lived from Yukon during that time, for the last thirty years?

A. Where I first lived was about four miles from Yukon, and I have been right where I am now about two miles for the last fifteen years.

Q. 6. Have you lived within four miles of Yukon for the last 50 years?

A. Yes, sir.

Q. 7. In what direction from Yukon?

A. Where I first lived was Southwest and now it's a little grain Southeast, about three miles.

Q. 8. Will you tell me in what year you first noticed the smoke in there?

A. No, sir, I can't tell you that.

100 Q. 9. Has it been thirty years ago?

A. No, sir, not that long.

Q. 10. Tell me please, the first time you noticed it in there?

A. I reckon it was about three years ago that I first noticed it.

Q. 11. Do you swear that you never noticed the smoke in there until about three years ago?

A. If I did, I didn't know it was the Ducktown smoke.

Q. 12. You didn't notice anything back more than three years ago?

A. I don't believe I did.

Q. 13. Did you ever smell any back more than three years ago?

A. No, sir, I don't recollect that I have.

Q. 14. You can't swear that you did or not notice it?

A. No, sir, I don't know as I did.

Q. 15. Then it was in 1911 when you first noticed smoke in there?

A. 1911?

Q. 16. Yes, three years ago.

A. It was about three years ago that I first noticed or hearing about it.

Q. 17. Prior to that time, you hadn't noticed any trouble in your neighborhood from smoke?

A. There wasn't none that I recollect of.

Q. 18. No trouble with your corn more than three years ago, was there?

A. I don't — that there was.

Q. —. No trouble with your Irish potatoes more than three years ago?

A. No, sir.

Q. 20. No trouble with anything that grew in your gardens more than three years ago; that's true is it?

A. I don't recollect of anything bothering it.

It is agreed that it is by air line 26½ miles from Copperhill to Yukon, and 28¾ miles air line from Isabella.

Q. 21. What was it that you first noticed?
A. About the smoke?
Q. 22. Yes.
A. I first noticed it coming in there and I could smell it when the air set from the North.
Q. 23. That was 1911, what month?
A. I don't recollect what month it was.
101 Q. 24. What did it first effect?
A. It first affected the green wheat and rye and corn.
Q. 25. Which one did you first notice it on, the corn, wheat or rye?
A. Wheat and wheat and oats first year; and the weeds; it killed the weeds in spots.
Q. 26. Can you tell me what time of the year that was——
A. No sir, I can't. I don't try to recollect everything. If I had knowed it I could have done it.
Q. 27. When did you notice it in the corn?
A. It was in the fall. It killed it after the corn was cut off.
Q. 28. That was 1911, three years ago?
A. Yes sir, somewhere along about four years ago.
Q. 29. That was in the fall of 1910, then?
A. Yes sir.
Q. 30. Really then the first you ever noticed it in there was in the fall of 1910?
A. Yes sir, along then. I noticed the weeds being killed about then.
Q. 31. Did you trace that smoke to see where it come from?
A. Yes sir, it come from the North; it come that way every time the wind set from the North.
Q. 32. How far did you trace it from the North?
A. I didn't trace it no way; I just see'd it coming. I didn't follow it up to see which way it come from.
Q. 33. Taking the year 1910, how many times did you see it in there; see it every day?
A. No sir, not every day. I would see it nearly every week. I didn't pay much attention to it.
Q. 34. How much damage did you see that you are certain was the result of that smoke in 1910?
A. I couldn't tell you exactly, but all the chestnut and hickory trees are dying.
Q. 35. Kill all your trees in 1910?
A. I don't know that it killed the mall in that year.
Q. 36. Killed all of them?
A. Yes sir; if there is a living chestnut tree I don't know
102 it.
Q. 37. You think the smoke did that?
A. I don't know what else done it.
Q. 38. Have you examined thre trees?
A. No sir.
Q. 39. Do you know anything about this fungus disease Dr. Hedgecock swears about?

A. No sir.
Q 40. Have you dug up any chestnuts to see if they had any disease in the roots?
A. No sir, I haven't worked in the chestnut business.
Q. 41. As a matter of fact you don't know what killed your chestnuts?
A. I don't know exactly what done it, but I believe what done it; I never knowed none of them to die before then.
Q. 42. In regard to these potatoes, you say you raised fifteen or twenty bushels?
A. Yes sir.
Q. 43. When did you do that?
A. About four years ago.
Q 44. Say three years ago, how many bushels did you get off of that patch?
A. Fifteen or twenty.
Q. 45. That was 1911?
A. Yes sir.
Q. 46. Three years ago?
A. Yes sir.
Q. 47. Two years ago, how many bushels did you raise?
A. I don't know how many bushels I raised.
Q 48. I am talking about 1912, how many did you get in 1912?
A. I don't recollect how many I got, but not many.
Q. 49. Did you raise ten bushels?
A. I don't know whether I did or not.
Q. 50. Ever have any bugs on them or not?
A. I don't know, I don't think there was; whenever the bugs commence on my 'taters I kill them
Q. 51. Didn't sometimes the bugs get the lead?
A. No sir, I didn't let them do that.
Q 52. Watched them day and night?
A. No sir, I watched them in the day.
Q. 53. Isn't the night the time they work?
A. They work night and day.
Q. 54. You never saw any work in the day, did you?
A. Of course they do. We have some bugs that work night and day.
103 Q. 55. Do you swear that a bug does his work in the day?
A. No I won't swear that he does, but I think he does work in the day; anyway that's what I think about it.
Q. 56. What about your beans two years ago?
A. I never raised no beans at all two years ago.
Q. 57. That was last year wasn't it?
A. Last year, and the year before that.
Q. 58. What was the matter with the beans?
A. They was scabby.
Q. 59. How long have your beans been scabby?
A. They've been scabby three or four years.
Q. 60. What caused that, do you know?
A. I think it's the smoke.

Q. 61. Do you know whether it is or not?
A. I am satisfied that it is. I have see'd beans before this.
Q. 62. Didn't you see them have scabs?
A. I never did like they have them now.
Q. 63. Wasn't quite so bad?
A. No sir.
Q. 64. Did they ever have scabs?
A. No. Sometimes the beans would get down on the ground, but it wasn't scabbed up that way.
Q. 65. Going back to potatoes, how many did you raise last year?
A. I didn't measure them.
Q. 66. Give us a guess as to how many you raised last year?
A. I guess I made six bushels last year.
Q. 67. Get any this year?
A. I haven't yet, and I'm satisfied I won't.
Q. 68. Have you examined the ground to see if there is anything wrong with the potato ground?
A. No sir.
Q. 69. How long have you been planting that ground in potatoes?
A. I have planted it for three years or maybe four.
Q. 70. And four years ago you made fifteen bushels?
A. Yes sir, fifteen or twenty.
Q. 71. Every year you are planting it in potatoes and not
104 putting something else in it, and your crop gets poorer?
A. It is getting poorer.
Q. 72. Every year they are decreasing?
A. Yes sir, they have been for two or three years.
Q. 73. You don't know what is the matter with these vines do you?
A. No sir, I don't know, but I am satisfied that it is this smoke.
Q. 74. Smoke from these furnaces twenty-four and twenty-seven miles away?
A. Yes sir, it does, and if you don't believe it you come down there and I'll show you. I wish you would come and see it.
Q. 75. Talking about your fruit trees, did you ever see an apple tree that had the scales?
A. Yes sir, I have never seen them with it.
Q. 76. Your orchard died with the scale didn't it?
A. No sir; some of the trees might.
Q. 77. Don't you know that your apple orchard is dying with the scale?
A. No sir.
Q. 78. You have seen the scale disease, diseased trees?
A. No sir, I never did see that disease.
Q. 79. Will you swear that your orchard has not got the scale and got it badly?
A. No sir, I wouldn't swear it didn't have nothing.
Q. 80. When did your apples first die, in what year?
A. They commenced to drop off about three years ago; they didn't stay on the trees until they got ripe. When I bought the place there

was a few trees there then, and them apples stayed on the trees until Christmas; they would stay on the trees until Christmas; now, they don't hang on until they get ripe.

Q. 81. How many apple trees have you?

A. I had about four hundred before they commenced to die.

Q. 82. How many of them are dead?

A. I don't know.

Q. 83. Half of your apple trees dead?

A. Half of them are not bearing.

Q. 84. And you think the smoke did that?

A. Yes sir.

Q. 85. What year did they begin to die?

A. Three years ago, or four.

Q. 86. Didn't they begin to die four years ago?

A. No sir, I don't think so.

105 Q. 87. As a matter of fact, didn't some of them die five years ago?

A. No sir.

Q. 88. How old are they?

A. Seven or eight years old.

Q. 89. You have never had any scientist or expert to go and examine your orchard and see what the trouble was?

A. No sir, I thought I was expert enough to know.

Q. 90. St-ll you don't know anything about that scale?

A. I know what they call scales.

Q. 91. You haven't had your apple orchard sprayed?

A. No sir.

Q. 92. You got any peach trees?

A. Yes sir.

Q. 93. What about your peach trees?

A. Some of them ain't no good.

Q. 94. They killed too?

A. No, I don't know as they are killed, but it don't seem like they are doing any good.

Q. 95. How do they look?

A. Some of them has got some peaches on them.

Q. 96. Speaking about your corn turning black and getting smut all over your hands?

A. Yes sir.

Q. 97. When did that happen?

A. Three or four years ago.

Q. 98. You know what smut is in corn?

A. Yes sir.

Q. 99. That's what's the matter with your corn, ain't it—it's got smut.

A. No sir; of course corn always has some smut on it; I have found that in corn all my life.

Q. 100. You are now about half the distance between your place and Copperhill; that is it's about half as far to Blue Ridge where your deposition is being taken, as it is to Youkon?

A. I guess it's nearer to Copperhill than it is to my house?

Q. 101. You are now right in sight of a corn patch?
A. Yes sir, I can see one. I noticed it when I come up.
Q. 102. You don't see anything wrong with that do you?
A. I ain't noticed it close enough to tell. I never examined it.
Q. 103. How does your corn look this year?
A. It don't look good; it didn't grow off like it ought to.
106 Q. 104. When did it begin to show that it was stunted in its growth?
A. It was along in May, and along in June, all the way through.
Q. 105. You have had an exceedingly dry summer, haven't you?
A. No sir, we ain't had much drouth; we had showers all along.
Q. 106. Here in Blue Ridge, do you find anything wrong with the vegetation?
A. I haven't noticed it, haven't examined it at all.
Q. 107. Have you been filing any claims to obtain damages out of the fund paid by the Tennessee Copper Company?
A. I filed a claim this year, is all the claim I filed. If they will quit the smoke I won't never ask for any damages.
Q. 108. You have filed one this year?
A. Yes sir.
Q. 109. How much damages you claiming this year?
A. I was claiming four years back—$800.00.
Q. 110. Claiming it for four years back.
A. Yes sir.
Q. 111. When did you file that claim?
A. 'Long back in the Spring like.
Q. 112. You mean you have brought suit?
A. Yes sir.
Q. 113. Before whom?
A. I laid in a claim.
Q. 114. You give it to some lawyers?
A. Yes sir, a young little lawyer in Ellijay.
Q. 115. And who is this little lawyer's name you filed that claim with?
A. I believe it's that gentleman there. (Points to Mr. Hill). I am not sure.

Mr. Hill: He has reference to Evans, Spence and Moore of Atlanta.

Q. 116. Didn't Mr. Shippen have you brought up here?
A. No sir.
Q. 120. You ever talked with Mr. Shippen about the case?
A. No sir, I never talked with Mr. Shippen in my life.
Q. 121. How about Mr. Frank Shippen?
A. I may have talked with him about it, but I don't think I have ever talked any serious talk about it.

Mr. Drake: We except to the question and answer as being
107 immaterial and irrelevant to the issue, and as being an attempt to reflect upon the State of Georgia.

Q. 122. Who was it that came to you and talked to you about becoming a witness up here?

A. That gentleman right there, Mr. J. A. Drake. Mr. Drake's a big lawyer.

Redirect examination.

By Mr. DRAKE:

Q. 1. General Fowler asked you about smut in corn; I will ask you if smut in corn doesn't affect the ear and make it puff up in the fall of the year?

A. Yes sir, it gets into the corn and it commences swelling.

Q. 2. It doesn't affect the blades?

A. No sir, it don't affect the blades.

Mileage of witness 47 miles.

J. H. CLONTS, after being duly sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination.

By Mr. DRAKE:

Q. 1. Where do you live, Mr. Clonts?

A. I live in Gilmer County.

Q. 2. What part of the county.

A. In the Eastern part from Ellijay, about six miles.

Q. 3. How far from Ellijay; in what neighborhood?

A. In what is called Turnip Town creek.

Q. 4. How far are you, Mr. Clonts, from Turnip Town?

A. I am right in what is called Turnip Town mountain.

Q. 5. How old are you, and what is your profession or occupation?

A. My age is about forty years; I don't know my age exactly. I follow farming mostly.

Q. 6. How long have you been living where you are living at the present time?

A. I have been living there about eighteen years; right there and in about a half mile from there.

108 Q. 7. What kind of crops do you grow from year to year.

A. I grow potatoes; each kind, sweet and irish; I grow corn; oats; cabbage, and such stuff as that. We try to grow oats, but we don't grow none; the smoke ruins them so they won't make.

Q. 8. Have you any fruit trees on your farm?

A. Yes sir.

Q. 9. State whether or not there are orchards of considerable extent over there in your neighborhood; if so, whose?

A. Yes sir; there is Mr. Arnold's and Mr. Northcut's; they have several thousand trees. Then there is one on the place I used to own.

Q. 10. What about the extent of the orchards, I mean how big orchards are they?

A. Mine runs about 500 trees, and these others run up in the thousands; I don't know how many thousands they have got.

Q. 11. If you have observed any smoke in there in the last few years, state about what kind of smoke it was?

A. This smoke in there is what they call the Ducktown smoke. When the wind comes in from the North it comes towards us; comes rolling in there like the woods was afire, and comes in and drops in your fields, and when it comes over and drops in there you can smell it. After it comes in there, in a day or two you can see it on the leaves of the trees; dries up the leaves.

Q. 12. What is the color of that smoke?

A. The color of the smoke? It is a blue looking smoke after it gets down in there.

Q. 13. You can see it, and I believe you say you can smell it?

A. Yes sir.

Q. 14. How does it smell?

A. It smells kinder like sulphur.

Q. 15. Have you ever been up around the plants at Ducktown or Copper Hill?

A. Yes sir, I have been at Copper Hill.

Q. 16. Did you smell the smoke when you went up there?

A. Yes sir, it is strong there around the works.

Q. 17. Is the smoke that you smell down there at your place on the occasions you mention the same kind of smoke?

A. Yes sir, the same thing.

Q. 18. When did you first commence seeing the smoke down in that neighborhood?

109 A. The first time I remember seeing so much of it come all at once was somewheres about eight or ten years ago when so much of it begun to come in there.

Q. 19. Let us get down to the year 1914, this year, when was the first appearance of the smoke this year?

A. I don't know positive what dates it was, but it was about the first of May.

Q. 20. After the first of May how frequently did you see it in there?

A. I can't say every day; it come in there frequently; day after day. I range cattle in the mountains, and I would go up there often, and you could go up on them mountains and see it boiling in down there out of the works when the wind comes in from the North. When the wind is going North you can see up there, but when it is soming South you can't see up there.

Q. 21. What obstructs your view when the wind is blowing towards the south?

A. That smoke.

Q. 22. When the wind is blowing towards Tennessee you can stand on the mountain and see it?

A. Yes sir, see it plain as rolling out of a locomotive here.

Q. 23. What mountain can you stand on and see that?

A. Aron Mountain, right up towards what is called the Bald.

Q. 24. In what part of Gilmer County is these mountains?

A. In what is called the Turnip Town section.

Q. 25. What were the visible effects on vegetation, on your

crops, on the foliage of the timber and on the weeds after that smoke would come down in there?

A. It crimps up the leaves and spots them all around, them and the 'taters; they turn kinder brown and they will stay there until they rot when they are killed that way.

Q. 26. You mean that the leaves are killed?

A. Yes sir.

Q. 27. And you mean that the potatoes are killed?

A. Yes sir, and it gets the peas; when they get pretty bad hit they shed their leaves, and also a young crop of peas fail.

110 I have seen them drop off that long (indicating).

Q. 28. How many days after the smoke would come in there until you would notice peas as long as your finger which you say you saw fall off?

A. In three or four days I would notice it.

Q. 29. This year, have you seen any of the effects of the smoke on the forests in your neighborhood?

A. Yes sir, I have saw it all down there on the creek and back there in the mountains.

Q. 30. What kind of trees did you see that were affected?

A. Chestnut Oaks; Black Oaks, and all kinds.

Q. 31. What varieties have you observed that it affects the worst?

A. Chestnut Oak I believe it hurts worse than any other kind of oak.

Q. 32. Than any other kind of oak?

A. Yes sir, I believe it does.

Q. 33. What of your garden crops and garden stuff does it hurt the worst?

A. Take the beans, I believe it hurts them, and young peas worse than anything in the garden.

Q. 34. Has it affected your beans and peas this year; and if so to what extent?

A. The first cropping of them when the smoke come in there about the first of June they all shedded?

Q. 35. Shedded the leaves?

A. Yes sir, and blooms. Beans, you know bloom and bear too; they shedded.

Q 36. What was the effect on your crop of beans?

A. The effect was that I won't get a full crop of beans.

Q. 37. You won't get a full crop of beans?

A. No sir.

Q. 38. Please describe the condition they are in?

A. Nothing like as good as usual; they are all spotted; kinder brown with spots on them.

Q. 39. Before the smoke came into that neighborhood what kind did you raise?

A. We raised them mighty fine nearly every year; everything.

Q. 40. If you have observed the smoke in there on them orchards this year, tell when it was, the condition of the orchard when

it come in, whether there was any fruit on it, and how it af-
111 fected it

A. I was over there a good deal; I live right close there and I could see the orchard and it was thrifty and growing right along; the trees was full bloomed, and it looked like they would get a pretty good crop of apples, and I was over there after that; after this smoke come in there, and the leaves turned a brown color on the edges and crimped up, and the little apples didn't grow any more, just like they done down home, though it's worser on that mountain on the North; more effects of this smoke than on me. I am down in the valley kinder, and it don't get me so bad.

Q. 41. These orchards that face towards Ducktown on the North of the mountain, what was the condition of the apples after this smoke struck them?

A. They was pretty and nice, and this fellow up there he has gone on and spent a lot of money spraying up his orchard and is working it up to date, and they was nice and pretty.

Q. 42. After this smoke struck them what shape were they in?

A. About how?

Q. 43. What were the effects?

A. Just about like I told you them leaves all turned up and turned brown; they stopped growing, didn't grow any more and the apples fell off.

Q 44. To what extent did the apples fall off?

A. I would say about half.

Q. 45. What month did they fall off in?

A. I believe it was along in June.

Q. 46. Do you know how long ago; it hasn't been in the last few days has it?

A. No sir.

Q. 47. How long before you saw these apples fall off, you say that you saw them in a healthy and fine condition?

A. I saw them in bloom, and I saw them when they was about as big as the end of my thumb.

Q. 47. Were they healthy, fine looking apples?

A. Yes sir.

Q. 48. How long after that was it that you saw them brown and parched and falling off?

A. I don't know positively how many days; not so powerful long tho'.

112 Q. 49. As much as ten or fifteen days?

A. Yes sir, I guess it was.

Q. 50. In the mean time had there been smoke in there, and if so to what extent?

—. ——.

Q. 51. It has been in there more this year than it has been before; it seems like the wind comes from the North more, and when it does it comes in there. I wouldn't say that it come in every day I think there was some of the days that it went back North.

Q. 52. Last year how was the smoke?

A. There was a right smart last year, but it never hurt us so bad last year as it did this year.

Q. 53. How have the prevailing winds been this year?

A. They have been coming from the North.

Q. 54. When you went on these mountains which you have described where you say that you can see the smoke boiling up from these plants, I will ask you if you could observe the two plants at Ducktown?

A. Yes sir, you can see them both whenever the smoke is going the other way.

Q. 55. Can you tell the two volumes of smoke as they rise up into the air?

A. Yes sir. They get together. You can watch them. It takes like five or six miles for them to get together, and the whole elements are dark back in there.

Q. 56. You can for a good distance distinguish the two volumes of smoke by sight?

A. Yes sir.

Cross-examination by J. A. FOWLER:

Q. —. How many acres of land do you own in there.

A. Something like 200 acres and over.

Q. 2. How much do you cultivate?

A. About thirty acres.

Q. 3. The remainder of it timber lands?

A. Yes sir.

Q. 4. What kinds of timber grow there?

A. Mighty near all kinds; poplar, chestnut, oak, black oak, white oak, and pine.

Q. 5. Have you sold any of it?

A. Not recently, I ain't.

113 Q. 6. Have you ever sold any?

A. Yes sir.

Q. 7. How long ago?

A. I sold a little of it last winter.

Q. 8. That was cut and taken off?

A. Yes sir.

Q. 9. Who did you sell it to?

A. I had it sawed and sold the lumber to Mr. Shippens.

Q. 10. When did you buy that land?

A. I can't tell you now when I bought it. I have had some of it I wouldn't say positively how many years,—about ten or twelve years.

Q. 11. How long have you lived up there?

A. About eighteen years.

Q. 12. At the same place?

A. Within half a mile of the same place.

Q. 13. The first time you noticed any smoke up there was eight or ten years ago?

A. Yes sir.

Q 14. Do you recollect what called your attention to it, smell it and seeing what it was?
A. Yes sir, I think I do.
Q. 15. Was it about the same time that the high stack was bu
A. I don't know who it was that built the high stack.
Q. 16. You know don't you that it commenced coming to y place when that copper company stack was built?
A. Yes sir, and some before.
Q. 17. How long before.
A. I don't know.
Q. 18. Don't you have any idea?
A. Well sir, it was in there some three or four or five years fore that. I noticed it ever since I been in there. You can se on the top of that high mountain in there any time.
Q. 19. You can climb to the top of that high mountain and l North and see it?
A. Yes sir.
Q. 20. You say you know the furnaces?
A. I can see their stacks.
Q. 21. See both at once?
A. No, one.
Q. 22. You can see the high stack of the Tennessee Cop Company?
A. Yes sir, I have seen one.
Q. 23. You can see it over twenty miles of country?
A. I expect I can see further than that.
114 Q. 24. You didn't see any smoke in your neighborh until the high stack went up?
A. Yes sir, I think I did.
Q. 25. Do you know?
A. Yes sir.
Q. 26. Why did you say you think?
A. I guess it was after that stack went up.
Q. 27. You didn't notice it before that?
A. Yes sir, we noticed it before that.
Q. 28. It didn't hurt anything did it?
A. It didn't hurt us as bad.
Q. 29. Did it hurt anything at all?
A. Yes sir; it hurt the timber just like it hurts it now.
Q. 30. Didn't hurt any chestnut trees before that?
A. Yes sir, the chestnut commenced to die in the tops.
Q. 31. Do you know what killed it?
A. No sir, I don't know.
Q. 32. Don't you know that chestnut and chestnut oak are dy in other mountains?
A. Yes sir.
Q. 33. Forty and fifty miles away from these stacks?
A. No sir.
Q. 34. Have you been that far away through the mountains?
A. No sir.

Q. 35. You don't know what is killing your timber down there where you live, do you?

A. We claim that it is the smoke; it hurts our other stuff.

Q. 36. Any way, you heard no complaint in that neighborhood until the high stack went up?

A. No sir.

Q. 37. Wasn't the smoke worse in 1906, 1907 and 1908, just after that stack was constructed than any other time, for two or three years, than it has ever been?

A. No, I don't believe that. This year it has hurt us worse than any year.

Q. 38. I mean, wasn't it worse for two or three years after the high stack was put up than any other time except this year?

A. It has been bad all along; I don't know it was worse
115 then. We know it was worse than it was before it was put up.

Q. 39. Wasn't it worse in 1906, 1907, 1908 than it was last year?

A. I don't know that it was. Of course, we have been hurt so much——

Q. 40. What did you lose last year; what crops did you have that suffered loss?

A. When we didn't have nothing to knock us back, I would make 100 bushels of peas.

Q. 41. When did you make 100 bushels of peas?

A. Two or three years back.

Q. 42. In what year was it that you made 100 bushels of peas?

A. Two or three years back.

Q. 43. Well then, the smoke wasn't so bad that year as it has been?

A. No sir, it didn't hit us so hard. It seems like when we have rain, like today, and the smoke comes down in there like tomorrow, then it seems to hurt us worser than any other time.

Q. 44. Was your peas hurt last year?

A. Yes sir.

Q. 45. Year before last?

O. Yes sir, some, but not as bad as last year.

Q. 46. The year before that?

A. The year before that they wasn't hurt as much as they have been.

Q. 47. Was your oats and wheat hurt last year?

A. I didn't have none to hurt.

Q. 48. Your corn hurt last year?

A. Yes sir.

Q. 49. How much corn do you raise per acre?

A. I didn't raise all years alike.

Q. 50. You have been cultivating your lands in corn every year, some of it?

A. Yes sir, and broad cast it in manure.

Q. 51. It didn't make corn as well as it did when it was fresh, did it?

A. I never put it in corn when it was fresh.

Q. 52. You have been cultivating it in corn right straight along haven't you?

A. Not every year.

Q. 53. Still you expect it to raise the same quantity of corn every year?

A. If it could I would.

Q. 54. In regard to these fruit trees, I believe you say you have 500?

116 A. Yes sir. Part of them is not bearing.

Q. 55. How about your apple crop last year?

A. I had some trees that had a very good crop.

Q. 56. Hasn't it been your experience all your life that some years you will get a good crop of apples on some trees, and other years you won't?

A. I don't know; I never paid much attention to it.

Q. 57. You have been familiar with apple crops in North Georgia ever since you were a boy, haven't you?

A. No sir, I have been here only eighteen years.

Q. 58. Don't you know that for many years your apple crops fail entirely regardless of smoke?

A. No I don't know that.

Q. 59. Wasn't that your experience before any smoke ever came in your neighborhood?

A. No sir.

Q. 60. Do you mean to say that the apple crop never failed in North Georgia?

A. No sir.

Q. 61. Don't you know that from some cause apples will fall off prematurely?

A. I don't know about that.

Q. 62. Didn't you ever see apples do that before?

A. No sir; I never experienced none in my orchards until I moved up in that country.

Q. 63. You sprayed your trees?

A. Yes sir.

Q. 64. This year?

A. Yes sir.

Q. 65. What with?

A. With arsenic and lead?

Q. 66. That is a violent *position* isn't it?

A. Yes, but you see not very much goes in.

Q. 67. Not much sulphuric acid gets in the smoke does there?

A. I don't know; something it does though.

Q. 68. Don't you know that that stuff you sprayed your trees with is a very violent poison and will kill the trees if you put too much on?

A. Yes sir, if you put too much of the poison stuff on it would.

Q. 69. Have you never sprayed a tree and saw the tree killed?

A. No sir.

Q. 70. How often have you sprayed them?

A. Twice this year with arsenic and lead mixed. So much of one and so much of the other.

117 Q. 71. When did you do that spraying?

A. Done it 'long, I believe in April one of the sprayings.

Q. 72. After the leaves come out?

A. Yes sir.

Q. 73. After they were in bloom?

A. Just as they begun to close up, I sprayed them.

Q. 74. What diseases do you have in your neighborhood?

A. I don't know as I can tell you.

Q. 75. What diseases do they claim to have in there?

A. I don't know, some says one thing and some says another.

Q. 76. Do you know whether or not they have got a disease?

A. I don't know. I heard that some was, but I don't know.

Q. 77. Isn't it a fact that it is your understanding that your orchards have a great deal of scale, and that is what they have got?

A. Some do spray sometimes for that.

Q. 78. Isn't that what you are spraying for?

A. I sprayed one time for that, but I ain't got none there in my orchard.

Q. 79. You know what the scale is, don't you?

A. I don't know only what the other fellows says; I am not experienced in that.

Q. 80. Still you claim to know what it is?

A. All the experience I ever had is that it will show on the apple and shows on the trees; that it will show on the outside of the apple before it will show in the tree.

Q. 81. Don't your experience tell you that your trees give the appearance of being diseased in some way?

A. I don't know. I have got some trees that looks better than others.

Q. 82. Got any with the limbs looking rough?

A. Not that I remember. Down at the bottom there is rough bark like is usually there on the trees.

Q. 83. Do you know these gentlemen who have had their orchard sprayed?

A. Yes sir.

Q. 84. What kind of spray did he use?

A. I am not acquainted with it. I got his receipt and sprayed my orchard. We sprayed first one way and then another.

118 Q. 85. Did he spray at the same time?

A. Yes sir, all sprayed at the same time.

Q. 86. This the first year you all sprayed?

A. No sir.

Q. 87. Spray last year?

A. Yes sir.

Q. 68. That the first these orchards have been sprayed?

A. No sir; Mr. Arnold and Mr. Northcutt sprayed all along.

Q. 89. So these gentlemen on the South side of the mountain had disease in their orchards?

A. I don't know about that; they claimed that some kind of an insect or something was biting the apple.

Q. 90. You don't raise peaches?

A. No sir, I ain't got no peaches, but I have got some young trees.

Q. 91. Have you filed a claim to be paid damages out of the fund paid by the Tennessee Copper Company?

A. Yes sir.

Q. 92. How much damages did you claim?

A. I don't know what it is now.

Q. 93. How much have you been damaged?

A. I can't say, how much I have been damaged.

Q. 94. How much did you claim to have been damaged, you have to state some amount, I take it, in your application?

A. I just don't remember point blank the way we do. We can claim so much on the whole thing for a year.

Q. 95. You don't remember how much you claim you were damaged this year?

A. I don't remember point blank, but it seems like I give it in at $100.

Q. 96. For this year, how much for last year?

A. I didn't give any for last year; it is for the years back.

Q. 97. You mean that you have been damaged $100 altogether ever since that smoke came in there?

A. $100 a year; I wouldn't say positively that's the amount, but I think it is.

Q. 98. How many years do you claim that you are entitled t paid for that?

A. To get justice I ought to have pay for every year.

Q. 99. You have had this farm for how many years?

A. I have had it there about sixteen years.

Q. 100. Then you think you ought to have $1,600?

A. To get justice and right I think I ought.

119 Q. 101. Still you say the smoke has been coming in there only eight or ten years?

A. It has been coming in there every year since I have been there. We didn't know what it was, to say that it was Ducktown smoke, but at the same time I have been in the forest lots and we have lost timber out of there.

Q. 102. I believe you stated that there was no complaint about the smoke until this high stack was put in;

A. None that I know of; nothing like making any suits.

Q. 103. You are hoping to get $1,600 out of that fund?

A. No sir.

Q. 104. How much do you think you will get?

A. I don't know; I really don't know whether I will get anything.

Mr. DRAKE: It is agreed by counsel for State and defendants that witness lives 21¼ miles, air line, in a nearly due South direction from the Ducktown, Sulphur, Copper Company, and 18½ miles from the Tennessee Copper Company.

Redirect examination by Mr. DRAKE:

Q. 1. You spoke about having put in a claim, I will ask you whether or not the claim you speak of was not put in with Evans & Spencer?

A. Yes sir.

Q. 2. You haven't filed any claim with this board of arbitrators for the State and the Tennessee Copper Company?

A. No sir.

Q. 3. You were asked about spraying trees, I will ask you if the formula that you used is one that is recognized by fruit experts to be proper, and whether you used it as recommended?

A. Yes sir. You put in so many gallons of water to so many pints of that and use it that way. It is fixed up all ready to use.

Q. 4. I will ask you as to whether or not it — intended to keep off the insects, if that is the purpose?

A. Yes sir.

Q. 5. I will ask you whether or not when you sprayed for that scale you used an entirely different preparation?

A. Yes sir. We put that on in the winter time.

120 Q. 6. You put that on when there is no young foliage, and is an entirely different treatment from the one you described to General Fowler?

A. Yes sir, we make that a whole lot stronger.

Q. 7. I will ask you whether or not the spray you used for the scale is not a sulphur and lime preparation, or do you know what goes into that?

A. No sir.

Q. 8. It is stronger than the other kind you use, you know that?

A. Yes sir. You put the same stuff, I think, but you put it in stronger for the scale, they claim——

Q. 9. You had already used this spray which you were speaking of when the bloom was just closing up?

A. Yes sir.

Q. 10. And it didn't make the apples fall off?

A. No sir.

Q. 11. Then it was the smoke that come down in there and crimped up the leaves and the apples fell off?

A. Yes sir.

Q. 12. Is there any fruit left on these trees?

A. Yes sir, there is some.

Q. 13. What part of the tree is it that the fruit seems to fall from worst?

A. It is generally the south side of the tree that seems to be the *the* worst.

Q. 14. As to the top and bottom of the trees?

A. Sometimes it hurt them at the top more than the bottom, and then at the top, and sometimes the North side of the tree more than on the South side.

Q. 15. You don't pretend to be any expert on the diseases of trees?

A. Nor sir.

Q. 16. All that you state about the injury to fruit is what you have actually seen?

A. Yes sir, what I have seen.

Q. 17. And smelled?

A. Yes sir.

Q. 18. Have you observed any particular localities in your neighborhood that this smoke boils through worse when the wind is from the North?

A. I have. Back up in the coves there. I have noticed that when the wind is from the North I have noticed that it comes boiling through there like the woods is afire, and it gets into them fields there and spreads out on it. I have got a little house up
121 there, and I seen the smoke in there one day, and I said——

Q. 19. Don't tell what you said?

A. Well I saw the smoke boiling up through there in the gap and I thought that house was on fire, and I watched it there until way up in the night.

Q. 20. Could you smell it?

A. Yes sir.

Q. 21. And you thought that house was afire?

A. Yes sir; it reached on down and come down in there, and you could smell it as it come in through them low gaps.

Q. 22. It would come in through the gaps when the wind didn't blow hard?

A. Yes sir.

Q. 23. When the wind would blow hard it would come right on through?

A. Yes sir.

Recross-examination by General FOWLER:

Q. —. When was it that you saw that smoke, the time it looked like the woods was afire

A. It was in June.

Q. 2. What day?

A. I don't know what day, I never dated it.

Q. 3. The 25, 26 or 27th?

A. I can't say.

Q. 4. Was it the latter part of June?

A. It was somewhere along in June.

Q. 5. Give us a guess whether it was the first part or the last part?

A. Towards the middle, I guess.

Q. 6. Wasn't it on the 8th of June?

A. I wouldn't say.

Q. 7. The 9th of June?

A. I wouldn't say what day.

Q. 8. But it was in June?

A. Yes sir.

Q. 9. Wasn't it at the very time that these furnaces were shut down?

A. I don't know.

Q. 10. You don't know that they were shut down in June?
A. No sir, I don't know that they were shut down at all.
Q. 11. You had a hail storm over there in June didn't you?
A. Yes, sir, a little one.
122 Q. 12. When was that?
A. I don't remember just when it was.
Q. 13. Give us your best idea?
A. It seems to me that it was along about the first of July.
Q. 14. About the time the apples come off?
A. No sir.
Q. 15. That didn't knock the apples off the trees?
A. No sir.
Q. 16. The apples never fell off at all?
A. No sir, some of them are there yet.
Q. 17. Didn't that hail storm hurt your garden?
A. Yes sir, it knocked some holes in it.
Q. 18. Didn't it knock a good many holes?
A. Yes sir.
Q. 19. Didn't hurt your corn?
A. Yes sir, my crop of corn was late this year; it was bunched and tasseled when it come.
Q. —. You are not putting in any claim for damages arising from the hail storm?
A. No sir, and I won't the next time you hear from me.
Q. 21. Both the apples and the foliage on your present fruit crops are burnt?
A. Yes sir.
Q. 22. This year?
A. Yes sir.
Q. 23. On your peach trees?
A. I ain't got any peach trees.
Q. 24. Has the foliage of your corn been affected?
A. Nothing only these little spots on them.
Q. 25. I believe that your depositions are being taken at Blue Ridge?
A. Yes sir.
Q. 26. You are just about half way between your place and Copperhill, aren't you?
A. I don't know.
Q. 27. On an air line?
A. I don't know, I never measured it.
Q. 28. Isn't Blue Ridge almost directly between you and the furnaces at Copperhill and Isabella?
A. I don't know; I never set no compass to see, but I suppose it is.
Q. 29. Can't you get on those hill tops and see over Blue Ridge?
A. There is a little mountain there between this town and
123 where I live and you can't see it; but you can see on to Ducktown.
Q. 30. Have you looked at that field of corn right out there about 50 or 75 yards of you?

A. No sir.
Q. 31. Get up and look at it? (Witness goes to window.)
A. I can see it; but I haven't been close to it.
Q. 32. Do you see anything wrong with that?
A. I haven't examined it close.
Q. 33. Aren't there some little peach trees in sight there?
A. I see some peach trees.
Q. 34. Do you see anything wrong with those peach trees?
A. I couldn't tell without going and looking at them.
Q. 35. Don't you see an apple tree?
A. Yes sir.
Q. 36. Don't you see some apples on behind that house, some distance out?
A. Yes sir.
Q. 37. Doesn't that have every appearance of having apples on it?
A. Yes sir, it looks like it from here.
Q. 38. Any apparent damage to that?
A. I can't tell from this distance.
Q. 39. Do you see any signs on the leaves?
A. I see some on that tree yonder (Indicates).
Q. 40. What is the appearance of that leaf?
A. It's yellow.
Q. 41. That leaf; that de-d read at the top; that what you are looking at?
A. Yes sir.
Q. 42. Is that smoke damage?
A. I can't say positively; that is sorter like what I told you about.
Q. 43. Would you say that that leaf has been eaten by some kind of insect?
A. I can't say what is the matter; but there is something wrong with it.
Q. 44. That is the only thing you can see; that the only leaf?
A. Yes sir.

Mr. DRAKE: We except to all of that evidence because the witness on the stand has not had an opportunity to make an intelligent examination of the timber and trees here. Exception overruled. Appeal preayed and granted.

124 Redirect examination by Mr. DRAKE:

Q. 1. I will ask you whether or not, from your experience and observation of this smoke injury, it would not appear worse in some sections, and in some places it would not appear at all?
A. Yes sir; it would reach the lands along the creeks and rivers, and didn't have much affect on the higher lands; didn't hurt that as bad as it did the others.
Q. 2. I will ask you whether or not in the same neighborhood you would not find a patch that had been burned, and go a few hundred yards and you would find one that had not been burned?
A. Yes sir.

Witnesses Mileage—32 miles.

C. S. NORTHCUTT, being sworn to speak the truth, the whole truth and nothing but the truth, testified as follows:

Direct examination by Mr. DRAKE:

Q. 1. Where do you live Mr. Northcutt?
A. I live in Gilmer County, five miles and a half by wagon road East of Ellijay.
Q. -. Near what post office?
A. Ellijay is our Post Office.
Q. 3. What district or section do you live in?
A. Tuniptown; that is our section, what is called the Turnip Town section.
Q. 4. How near to Turniptown Mountain?
A. I live on the slope, or what is called the Northcutt mountain.
Q. 5. Do you live near Mr. Clonts?
A. In about a mile of him.
Q. 6. Are you about the same distance from the plant at Ducktown as Mr. Clonts is?
A. Yes sir.
Q. 7. Farming there?
A. My principal business is looking after the orchard interests of my brother and myself, but I farm on a small scale.
Q. 8. Who owns the land?
A. Mrs. J. D. Northcutt.
Q. 9. How long have you been living there?
A. Eleven years last January.
Q. 10. What size orchard is it?
A. The apple orchard proper?
Q. -. Is it a large or small orchard?
A. There is somewhere about 100 acres altogether, including mine and his in apples.
125 Q. 12. How many trees are there?
A. About sixty-five hundred.
Q. 13. What is the condition of these apples trees Mr. Northcutt?
A. The condition at the present time is not very favorable.
Q. 14. How are they affected and by what?
A. I think that the greatest thing there is against us is the smoke; that's my honest opinion about it.
Q. 15. What smoke?
A. Ducktown; the smoke from these furnaces North of us.
Q. 16. Did you ever see smoke in there?
A. Yes sir.

GENERAL FOWLER: Counsel for the defendant objects to the opinion of the witness as to what particularly effects the orchard because he has not shown that he is an expert and is not qualified to express an opinion. Objection overruled. Appeal prayed and granted.

Q. 17. You have seen the smoke in your section?
A. Yes sir.
Q. 18. Seen it this year?
A. Yes sir.

Q. 19. See it last year?
A. Yes sir.
Q. 20. How long have you seen it in there?
A. Some seven or eight years, I should say.
Q. 21. Ever smell it?
A. Yes sir.
Q. 22. How does it smell?
A. It smells like sulphur to me.
Q. 23. What did you notice about the condition of the apple trees after the smoke has been in there?
A. I want to refer to, if it is agreeable, a certain time?
Q. 24. That's all right.
A. The heaviest smoke I have noticed since I have been there was I think on the 8th and 9th of last June, June of the past year. Our trees seemed to be fairly well up to that time, but since that time they have scarcely growed any.
Q. 25. What effect does it have on the foliage of the trees?
A. Our foliage was very promising this last spring; we sprayed them for the candle moth, and we thought that we was going to get a good crop of apples, but after that the foliage dropped, and the
126 little apples begun to turn yellow and drop off.
Q. 26. How far advanced were they, the entire crop at that time; how big were the apples at that time?
A. About the size of a pea or a little larger.
Q. 27. You say that the leaves dropped off?
A. No, I am talking about the bloom; the foliage bloom is what I had reference to.
Q. 28. When was it that you sprayed them?
A. It was in May I think that we sprayed them; the latter part of May, I think it was.
Q. 29. How many times did you spray them this year?
A. Three times.
Q. 30. Do you spray your trees each year?
A. Yes sir.
Q. 31. What is the condition of your apple orchard now as compared with the prospects for a crop during the early part of the season?
A. The prospects at the present time are gloomy as to what they were in the Spring.
Q. 32. As to your farm crops, what do you raise?
A. I raise corn, potatoes, beans and other vegetables.
Q. 33. What effect if any did this smoke have on them?
A. Before this heavy smoke our corn silks looked fresh and good, and after that they began to turn a dark color and a great many of them dropped off; while others at a change of the air began to show a little life.
Q. 34. When that smoke comes in there from what direction is the wind?
A. It's from the North.
Q. 35. What is the appearance of it?
A. It has an appearance very similar to fire smoke.

Q. 36. Did you ever examine the corn and other crops immediately after the smoke was in there, when the corn was tasseling?
A. I noticed it this time I just spoke of.
Q. 37. What effect did it have on the tassels and the silks?
A. I never noticed the tassels; I noticed the silks. They turned kind of dark like and fell off some of them.
127 Q. 38. What effect did it have on the leaves of the trees——
A. I noticed some of the leaves with a brown spot on them.
Q. 39. You got any timber lands on your place?
A. Yes sir.
Q. 40. Did you notice anything of their condition?
A. Some, yes sir.
Q. 41. What was their condition?
A. The leaves had these spots on them.

Cross-examination by GENERAL FOWLER:

Q. 1. I believe you say that you have lived there for eleven years?
A. Yes sir, eleven years and eight months.
Q. 2. Where did you move from?
A. Marietta, Ga.
Q. 3. Smoke didn't come down that far?
A. No sir.
Q. 4. You first notice- smoke there seven or eight years ago?
A. That's the best of my recollection.
Q. 5. Don't you recollect when the high stack of the Tennessee Copper Company was built?
A. Of myself, I do not.
Q. 6. You don't know that it is a fact that that smoke commenced to come over there when that high stack was built?
A. No sir.
Q. 7. The first you noticed of it was in 1906 and 1907?
A. The best of my recollection, yes sir.
Q. 8. You are looking after that apple orchard?
A. Yes sir.
Q. 9. Sixty-five hundred trees?
A. Yes sir.
Q. 10. Different varieties of apples?
A. Yes sir.
Q. 11. How old is your orchard?
A. Eleven years ago last Spring I got out 2500, and the following Spring I set out the remainder of the archard.
Q. 12. You have good sized apple trees now?
A. Yes sir, they growed fine for the first three years, but they never have growed as they did up to that.
Q. 14. That is from 1906, and along about that time, they quit growing so much?
A. Yes sir; they haven't growed as well as they did before.
Q. 15. You have gotten some good crops off of them?
A. Yes sir, reasonable crops for the age of the trees.
128 Q. 16. How much did you make off of that orchard, say in 1911, that will be three years ago this fall?

A. We never gathered but a few apples.
Q. 17. In 1912, what did you get?
A. Only a few.
Q. 18. In 1913, what did you get?
A. I would like to change that; I spoke before I thought there about 1912; in 1912 we got the best crop we ever got there. We got probably seven or eight hundred crates that year; last year we didn't get more than probably three hundred crates.
Q. 19. Have you got any di-ease in your orchard?
A. Yes sir.
Q. —. What are they?
A. The San Hosae scale in places.
Q. 21. Got it pretty bad, haven't they?
A. Pretty bad in places.
Q. 22. As a matter of fact, the scale has spread all over that commnuity hasn't it?
A. I don't know sir, I can't speak as to that.
Q. 24. You have been spraying for it haven't you?
A. Yes sir. My orchard has been sprayed for it, but I haven't got any of it.
Q. 25. How many trees have you?
A. Twelve hundred and fifty.
Q. 26. Your orchard is better than the other orchard?
A. Yes sir.
Q. 27. Did you make a better crop on your orchard those two years than you made on the other?
A. No sir.
Q. 28. How was it last year?
A. I didn't have but a few.
Q. 29. The frost got you last year didn't it?
A. I don't know whether it was the frost or not. We don't get the apple blooms we ought and the apples shed off.
Q. 30. The frost does sometimes kill the fruit in this section?
A. Yes sir.
Q. 31. The frost killed fruit in there before the furnaces were ever put up, didn't it?
A. Yes sir, I suppose so.
Q. 32. You don t know last year, whether the bloom was killed by frost or by smoke?
A. It wasn't killed by frost last year.
Q. 33. How do you know?
A. My recollection is that we didn't have frost that time.
129 Q. 34. How about the year before that, how about that?
A. I don't remember positively.
Q. 35. Did the blooms drop off this year?
A. Yes sir; a good many. We have a few apples this year.
Q. 36. Didn't you have frost through there this year?
A. Yes sir, we had frost long before the bloom fell.
Q. 37. Frost will kill fruit if it is a heavy frost, before it opens out, won't it?

A. Yes sir, but it wouldn't have remained on as long as this did; it would have dropped off before that.

Q. 38. Isn't it a fact that the apple crop is poor this year way down in Georgia, way below where this smoke can possibly reach?

A. I can't say about that; I know that it's poor around here, and has been since the trees have been old enough to bear.

Q. 39. Isn't it true that the peach crops are not near so good?

A. It is so stated that way.

Q. 40. Haven't you had a good deal of drouth in your section this year?

A. The weather was dry in May and April and June, but we never suffered for rain.

Q. 41. You spoke of the candle moth, is that an insect that gets into the apple?

A. Yes sir.

Q. 42. And that causes the apple to fall off?

A. Yes sir.

Q. 43. It has the very effect you explained here, and causes the apple to fall off the tree?

A. Yes sir.

Q. 44. Your apples been falling off this year?

A. Yes sir.

Q. 45. Have you been through Mr. Clonts' orchard?

A. I have been there, yes sir, but I never noticed it.

Q. 46. Don't you know that Mr. Clonts' apples have been falling off as they would if the candle moth was in them?

A. I don't know sir, about Mr. Clonts's apples; I never visited his orchard enough to tell.

Q. 47. But any way the candle moth does cause the apples
130 to fall off as you have described here as your apples have been doing?

A. It will where they are not sprayed. I claim that my orchard was sprayed well for the candle moth, and what apples we have there don't show it; there is but little sign of the candle moth.

Q. 48. They do show some signs, don't they?

A. Very little; just now and then you can see an apple that probably the spray didn't get.

Q. 49. How is it in your brother's orchard?

A. Brother's orchard wasn't sprayed for the candle moth and it shows up in that some.

Q. 50. The worst you noticed this smoke, I believe you say was the 8th and 9th of June?

A. Yes sir.

Q. 51. That was on Monday and Tuesday?

A. Yes sir, I think that was the days.

Q. 52. What time of the day did you first notice that smoke?

A. It was a little after twelve o'clock.

Q. 53. Of course your apple trees had long since shed their blooms?

A. Yes sir.

Q. 54. You had a right smart little apples at that time?
A. Yes sir.
Q. 55. They had been dropping off before that hadn't they?
A. Yes sir.
Q. 56. Have you noticed smoke since then?
A. Yes sir, but not so severe as that was.
Q. 57. Do you remember when you noticed it?
A. My best recollection is that it was the 27th, 29th and 30th of July.

Redirect examination by Mr. DRAKE:

Q. 1. When does the candle moth attack the apple?
A. It is when the tree sheds the bloom and the blossoms.
Q. 2. State whether or not you sprayed for the candle moth before that time or after that time?
A. It was sprayed about the time when there was three fourths of the foliage and the bloom fell.
Q. 3. Is that or not the time to spray for the candle moth?
A. Yes sir.
131 Q. 4. You say that your orchard has been sprayed for that?
A. Yes sir.
Q. 5. Is your orchard adjoining that of your brother's?
A. Yes sir.
Q. 6. Is the same tract of land?
A. Yes sir, but his is higher up.
Q. 7. Yours is down in the cove?
A. Yes, sir. Part of my brother's is above the frost line.

Recross-examination by General FOWLER:

Q. 1. What were the constituent parts of the spray that you used for the candle moth?
A. We used lime, sulphur and zinc lead.
Q. 2. That zinc lead is a violent poison for either plant or beast?
A. Yes, sir.

Mileage of witness; 34 miles.

ASBURY HINSON, being sworn to speak the truth, the whole truth and nothing but the truth testified:

Direct examination by Mr. DRAKE:

Q. 1. How old are you, Mr. Hinson?
A. About 45 years old.
Q. 2. Where do you live?
A. Gilmer County.
Q. 3. In what part of the county; what is the name of the neighborhood in which you live?
A. Turnip Town, about six miles East of Ellijay.
Q. 4. How close to J. H. Clonts?

A. About half a mile.

Q. 5. What is your avocation?

A. Well, I work for Mr. C. H. Aarnold in the orchard.

Q. 6. In what way?

A. I oversee the orchard for him.

Q. 7. You look after Mr. Arnold's orchard for him; do you do any farm work in connection with that?

A. Yes, sir.

Q. 8. To what extent?

A. Right smart. I 'tend a crop for myself and then I 'tend a crop for him; we put in something like 75 acres in corn.

Q. 9. How big an orchard has Mr. Arnold got?

A. He has a big orchard; there is something like 9,060 132 trees.

Q. 10. How long have you been in that neighborhood and been in this class of work?

A. I have been working for Mr. Arnold ever since he set up his orchard; it has been eleven or twelve years I reckon.

Q. 11. Are you familiar with the crops that are raised in that section?

A. Yes, sir.

Q. 12. Are you or not acquainted with the various trees and the kind of growth they have in that section?

A. Yes, sir.

Q. 13. If you have ever seen *in* sulphur smoke in that community tell when was the first time you begun to observe it?

A. I have saw it off and on for nine or ten years, I reckon.

Q. 14. What is the appearance of the smoke?

A. When the wind is from the North it brings the smoke in there and it settles down on the mountains about there.

Q. 16. Can you see it?

A. Yes, sir.

Q. 17. What is its color?

A. It is kinder blue.

Q. 18. Have you ever at any time been able to smell it.

A. Yes sir, at times, I have smelled it.

Q. 19. This present year, have you seen any smoke in that country and if so, when?

A. Yes sir, I have saw it in there somewhere along about the 8th and 9th of June it was in there heavy; the heaviest I ever saw it.

Q. 20. Heavier than you ever saw it in previous years?

A. Yes, sir, I think it was; I took more notice of it.

Q. 21. Whereabouts did you see it and observe it on these particular days?

A. The first day I saw it, I was sitting on the porch at home. It come up the branch. I first thought the woods was on fire, or some building on fire down below, and when I come to notice it, it was the smoke that come in there when the wind was from the North, and we had a North wind blowing that day.

Q. 22. Did you see that smoke go into this orchard of Mr. Arnold's?

A. Yes, sir.

133 Q. 23. To what extent was it in there?

A. It come in there just about eleven o'clock in the day that day, and it lasted until along about one or two o'clock and then it kinder blowed off.

Q. 24. In looking across towards Arnold's orchard was there any hill between you and it, or was it facing you?

A. It was facing me.

Q. 25. How far from you?

A. I was right against it; I live there right agin' it. The orchard comes down to the house. The next day I was off down the creek; I was half a mile from the orchard and it was so thick that I couldn't see the trees; the smoke was between us so thick that I couldn't see the trees there.

Q. 26. How big were those trees, how high?

A. Something like as high as this ceiling, I reckon.

Q. 27. Fifteen or twenty feet?

A. I would say from ten to fifteen feet.

Q. 28. How broad?

A. They are from eight to ten feet broad.

Q. 29. Would it have been easy for you to have seen those trees if that smoke hadn't been in there?

A. Yes sir, I could have seen them plain.

Q. 30. Did you notice any of the effects on the trees in the next few days; if so, what were they, after the smoke went out?

A. In a few days afterwards, just in a day or two afterwards, I begun to notice the effect on the trees; something got wrong with the trees and the undergrowth. The leaves crimped up and didn't grow any more after that.

Q. 32. You say the leaves crimped up, did they change color any, and if so, how?

A. They changed color after a while; they turned brown around the edges of the leaves and then kinder yellow and shedded off.

Q. 33. The leaves shed from the twigs?

A. Yes sir.

Q. 34. What percent did some of them trees shed off?

A. Some of them I would say 50% fell off, and the undergrowth was the same thing; some of them not any. The different varieties of the trees are hurt worse then the others; they are not all hurt alike. The Limber Twig was the last to crimp up of any.

134 Q. 35. Was it natural for the leaves to fall off in June?

A. No sir.

Q. 36. According to nature, when should those leaves fall?

A. Along the first of October is generally the time for leaves to fall there.

Q. 37. Did you see any smoke this year in May any time; if so when?

A. I don't know that I could tell you the dates, but I saw smoke off and on, a few times through May, I think.

Q. 38. Did you see any effects of this smoke or what appeared to be smoke on your place or on that orchard before this June spell?

A. That's the first I noticed of it.

Q. 39. The effects on the foliage?

A. Yes sir.

Q. 40. Have you observed any discoloration or smoke damages on the forests in that neighborhood?

A. I have noticed a little bit. I haven't been in the forests very much. I noticed some chestnut and oak bushes and hickory bushes; it sorter worked them like it did the apple trees.

Q. 41. You mean the same discoloration?

A. Yes sir, the same appearance in the forest as in the apple trees.

Q. 42. Have you see any smoke since June; if so when?

A. I can't tell you just when, but I have see'd it a time or two, but not so bad as them two days.

Q. 43. Do you remember the time when the L. & N. Railroad agent come up there to look at that orchard?

A. Yes sir.

Q. 44. When was that?

A. That was on the 10th or 11th, I wouldn't be positive which.

Q. 45. That in June?

A. Yes sir.

Q. 46. This year?

A. Yes sir.

Q. 47. Do you know how come him to come up there?

A. He just come up to look around and see the orchard.

Q. 48. Did he come up there specially to look over your orchard?

A. Yes, sir.

135 Q. 49. What was the result of that examination?

A. I told him to look at it and tell me what was the cause of that.

Q. 50. How did he examine that?

A. He looked at it with his eyes.

Q. 51. Did he use any glass?

A. No sir, not any glass at all.

Q. 52. He wasn't there as the agent of Mr. Arnold was he?

A. No, sir, he was there working for the interest of the L. & N. Railroad.

Q. 53. Did he claim to be interested for the copper company?

A. No, sir, he didn't claim to be interested for the copper company. He just seemed to be promoting industries on the line of the railroad.

Q. 54. You spoke something about the effects on Irish potatoes?

A. Yes, sir.

Q. —. Did you see the effects of the smoke on them this year——

A. After the smoke come in there the 'taters died down; just looked like a fire had been through them.

Q. 56. Do you mean by that that they turned brown and crimped up, or how did they appear?

A. I think they first crimped up that way (indicating) and then turned brown, and died down.

Q. 57. What effect did it have on your potato crop?

A. They didn't make anything.

Q. 58. How big a patch did you have?

A. Just a small patch.

Q. 59. Half a bushel planting?

A. Two or three bushels.

Q. 60. Have you observed the effect of the smoke in there on any other farm crops such as wheat, rye, oats and anything of that kind this year?

A. No, sir.

Q. 61. You didn't have any crops of that kind?

A. No sir, we didn't have any rye, oats or wheat.

Q. 62. Did you see it on any of your neighbors' crops?

A. No, sir, I didn't pay no attention to it.

Q. 63. Any other garden truck that you observed that was damaged by this smoke?

A. The tomato vines, they died like the 'taters, and the pie plants they died like the 'tater tops; that's about all I noticed.

136 Q. 63. Last year, did you observe any smoke in there?

A. I don't know that I did; I won't be positive about that; I don't have no recollection about that. I have noticed the smoke in there every now and then, and it has been coming in there for six or seven years, but I haven't noticed that it damaged anything in particular.

Q. 64. Was it as bad as it was this year?

A. No, sir, it wasn't so bad as it was this year.

Cross-examination by General FOWLER:

Q. 1. Did you state how long you had been looking after that apple orchard for Mr. Arnold?

A. I have been looking after it off and on ever since he set out the orchard. I helped him to clear up the land and prepare for the orchard.

Q. 2. When did he have it cleared?

A. Ten or twelve years ago.

Q. 3. Do you remember what year he had it cleared, was it 1904 or 1905?

A. I don't recollect.

Q. 4. Then you planted the trees right away?

A. Yes, sir, they have been set out for ten or twelve years; somewheres along about that time, and then we have set out others since that time.

Q. 5. At first it grew off right well?

A. Yes sir, it growed nicely for a while.

Q. 6. For how many years?

A. Three or four years.

Q. 7. Then it has been something like eight years since you first noticed the smoke?

A. Seven or eight years.

Q. 8. Before that time you hadn't noticed any smoke?

A. No, sir.

Q. 9. Had you heard any complaint in that neighborhood about the smoke?

A. No, sir, I don't know that I did.

Q. 10. What was the first effects of the smoke that you noticed?

A. The first I noticed that come in there was on corn silks. The corn would come out and be pretty and fresh and silky, and the silk would die immediately after the smoke would be in; then the silk would die down.

137 Q. 11. That was the first effect that you noticed?

A. Yes sir, about the first thing.

Q. 12. That would happen along in June when the corn was silking?

A. Yes sir; that was several years ago.

Q. 13. You didn't notice any effect on the corn silk until two or three years ago did you?

A. No sir.

Q. 14. How long has it been since you noticed any injuries arising from smoke?

A. I think the smoke, that is the first, I think it has been three or four or five years ago that I noticed the smoke on the corn silks.

Q. 15. You ever notice any damage to the crops or timber until three to five years ago?

A. Yes sir.

Q. 16. What was the next injury?

A. It was, I think, on these apple trees and potato tops.

Q. 17. How many years ago has that been?

A. That was in June.

Q. 18. This last June?

A. Yes sir.

Q. 19. You didn't notice any damage in your neighborhood, as I understand you, from the time you noticed this damage to the corn silks until the damage done to the apple trees this present summer?

A. Yes sir.

Q. 20. Did you have a pretty good apple crop last year?

A. No sir.

Q. 21. Wasn't they killed by the frost in the Spring?

A. I believe last year they got killed by the frost.

Q. 22. How was it year before last?

A. Year before last they didn't get killed by the frost, but we didn't get no apples.

Q. 23. Wasn't that because of the candle moth?

A. No sir, it wasn't large enough for the candle moth to take effect. It was just when they bloomed and shed off and the apples begun to grow. The candle moth sets in a little later than that.

Q. 24. That was two years ago, you say?

A. Yes sir.

Q. 25. That was in 1912, wasn't the apples better that year than they have ever been?

A. In portions they did, but in portions of the orchard lots

138 of the trees shed their blooms.

Q. 26. About what percent of your trees failed in apples that year?

A. There wouldn't have been more than 10% of them fail.

Q. 27. What per cent had apples on them?

A. They was just a few of them that had.

Q. 28. What varieties of the trees were they?

A. There was the Ben Davis; the Fall Queen and the Limber Twig was pretty full; them was the older trees that was set out when Mr. Arnold bought the place.

Q. 29. Didn't you have a frost that year?

A. No sir, I don't think we had any frost after the bloom come out.

Q. 30. When did you have a good crop?

A. We ain't never had a good crop of apples there.

Q. 31. Have your apple trees the blight?

A. Yes sir, a few of the trees around through the orchard have got the twig blight.

Q. 32. Have you got the San *Hosae* scale?

A. Yes sir, we have that.

Q. 33. Got it pretty bad?

A. It has been in pretty bad but we have about got it stopped. A few patches about through the orchard that have got it.

Q. 34. That is the most dangerous of all tree diseases, isn't it?

A. Yes sir.

Q. 35. When it gets into an orchard, its almost impossible to stop it?

A. I think a man can kill it; I have killed it in several trees.

Q. 36. You have to spray your orchard with very poisonous material to kill the San *Hosae* scale, don't you?

A. We spray it with lime and sulphur.

Q. 37. What do you spray with for the candle moth?

A. Arsenic lead, about three quarts to fifty gallons of water.

Q. 38. Did you spray this year for the candle moth?

A. Yes sir, where they are there; where the fruit had shed off I didn't spray.

Q. 39. Did you spray for the San *Hosae* scale?

A. Yes sir, but we spray in the winter for that.

139 Q. 40. Did the fire go through your orchard this year?

A. No sir, we haven't had no fire in the orchard this year.

Q. 41. Did you last year?

A. No sir, not all of it; we did have fire go through a portion of it, and that's the only fire we have had in the orchard.

Q. 42. So it is, that the first damage you ever noticed in there, except the damage three to five years ago to the corn silks, was the 8th and 9th of last June?

A. Yes sir.

Q. 43. And that was when the smoke come in there and injured your potatoes?

A. Yes sir, the smoke come in them two days heavy, and I see'd the injury after that.

Q. 44. How many days?

A. Right immediately; the next day I believe it begun to show.
Q. 45. You haven't seen it in there since that time in sufficient quantities to do injury?
A. Not so bad, no sir.
Q. 46. On how many occasions have you seen it in there since that?
A. Three or four times, I reckon; I wouldn't say positive.
Q. 47. You don't know what days they were?
A. No sir.
Q. 48. I believe you said it was in July, or did you?
A. No sir, it wasn't me. I don't recollect about that.
Q. 49. Do you remember whether it was July or not?
A. No sir, I don't remember whether *ot* was July or not; I don't remember that.
Q. 50. Have you filed any claim for damages?
A. No sir.
Q. 51. Has Mr. Arnold?
A. I think so; I don't know that he has.
Q. 52. Of course, you haven't any personal interest in the orchard?
A. No sir.
Q. 53. I believe you said that you hadn't noticed the effect of this smoke on the wheat and rye crops in that country?
A. No sir.
Q. 54. And you only noticed it on the corn silks one year?
A. Yes sir, I have noticed it possibly two.
Q. 55. When?
A. Last year we had some peas that shed their leaves off.
Q. 56. You really don't know what caused that?
A. No sir.

140 Redirect examination by Mr. DRAKE:

Q. 57. I will ask you if it isn't a fact that it has gotten so you can hardly raise peas in that neighborhood at all?

General FOWLER: We object to that as leading. Objection Overruled; Appeal prayed and granted.

Q. 2. How about that?
A. No sir, we can't raise any peas to do any good.
Q. 3. You were asked about the San *Hosoe* scale in there?
A. I call it the St. Joe scale.
Q. 4. That is what it is generally called by farmers?
A. Yes sir.
Q. 5. How much San *Hosoe* scale is there in that orchard?
A. There has been a right smart in the orchard in one or two places next to the Northcutt orchard; there is a little strip of scale on the trees; a few patches on the road that leads out to the top of the mountain.
Q. 6. Is it just a few trees in comparison with the 9,000 trees?
A. Yes sir.

Q. 7. Those that are not affected of course would not be subject to this condition that you have told General Fowler about?

A. How is that?

Q. 8. General Fowler asked you something about the effect of this San *Hosoe* scale on the trees and the fruit?

A. Yes sir, it gets up on the twigs and the limbs and gets on the apples.

Q. 9. Trees that are not so affected in that orchard, would they be affected in the same way as those that had this scale?

A. No sir.

Recross-examination by General FOWLER:

Q. 1. You didn't notice any damage to the peas until last year, did you?

A. No sir.

Mileage of witness: 33 miles.

C. S. NORTHCUTT, recalled for further cross-examination by General Fowler.

Recross-examination by General FOWLER:

Q. 1. Have you put in any claim before this arbitration
141 board who has the distribution of $16,500.00 paid annually by the Tennessee Copper Company?

A. I never have.

Q. 2. Has your brother?

A. I don't know whether he has or not.

Q. 3. Don't you understand that he has?

A. I can only tell you what I do know.

Mr. DRAKE: We except to that as hearsay. Exception overruled; appeal prayed and granted.

A. That has been several years ago. Brother told me that he had two lawyers up in Knoxville, Tenn. to look after this matter, and that probably he would want me to go up there as a witness; and that's all I know about it.

Q. 4. Who brought you here as a witness?

A. I was subpœnaed by the State.

Q. 5. Have you talked to either of the Messrs. Shippen about it?

A. Since I come here?

Q. 6. Yes?

A. It has been general talk with us all along. I don't know that I ever talked to Mr. Will Shippen. I was around Mr. Shippen's store and first one and then another was talking about it, and I have heard Mr. Frank Shippen speak about the smoke.

W. A. PAINTER, being first sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. How old are you?
A. Forty-three.
Q. 2. Where do you live?
A. In Gilmer County.
Q. 3. What part of Gilmer County, what neighborhood?
A. Five or six miles East of Ellijay in Turniptown.
Q. 4. How close to J. H. Clonts?
A. About a mile I reckon, or a mile and a quarter.
Q. 5. Which direction from Clonts?
A. West of Clonts, towards Ellijay.
Q. 6. How long have you been living in that neighborhood?
142 A. I have been living there all my life; was raised there.
Q. 7. What is your profession?
A. Farming and grow a little orchard.
Q. 8. How much land do you own?
A. About two hundred acres.
Q. 9. What kind of crops do you grow on that land?
A. Corn, potatoes, etc.
Q. 10. How long have you been at that?
A. Ever since I have been farming; ever since I have been old enough.
Q. 11. Are you familiar with the different kinds of garden truck and farm products that are grown in that neighborhood, or not?
A. Yes sir.
Q. 12. Are you familiar with the forest trees and the different varieties that grow in that section?
A. Yes sir, I know the most of them.
Q. 13. If you have observed in the last few years, any smoke in that country, tell when it began, when you first observed it and to what extent it has been in that country?
A. It has been about six years ago, I guess, the first time I noticed it being so bad in there; it has been bad in there ever since; some years worse than others.
Q. 14. How has it been this year?
A. Pretty bad.
Q. 15. How has it been this year as compared with other years?
A. One year it was as bad as this year, but it was later in the season; that was about six years ago.
Q. 16. What is the appearance of that smoke?
A. It drifts in through them low gaps; drifts in and settled on the mountains and in the coves.
Q. 17. Can you see it?
A. Yes sir.
Q. 18. What color is it?
A. It is a blue kind of smoke.

Q. 19. Can you smell it?

A. Yes sir, I have smelt it a few times.

Q. 20. This year, what times have you seen it in there, as you remember.

A. Along the latter part of May and in June it was in there.

Q. 21. In May, what time was it in there?

A. I don't know exactly; it was something about the middle of May I first noticed it in there.

Q. 22. Did you see any of the effects of it after it was gone?

A. At that time I didn't.

Q. 23. Have you since then observed it in there?

A. I have seen some, yes sir.

143 Q. 24. What was it?

A. The apple trees, the young twigs and leaves was kinder parched up. I have noticed it on the corn silk; it seems to die early.

Q. 25. How much corn have you in cultivation?

A. I have ten or twelve acres.

Q. 26. It was your corn that you saw the effects on?

A. Yes sir, and on others too.

Q. 27. Describe now, Mr. Painter, with reference to the time after you had seen this smoke in there, how long would it be before you would observe these effects?

A. Right immediately afterwards; something like three or four days.

Q. 28. Did you observe any effects on the forest trees?

A. Some little, but I never paid much attention to it.

Q. 29. What kind of varieties of trees have you noticed that were effected?

A. The hickory, I believe, and the Maple, something like that, I have noticed that the leaves would be parched up.

Q. 30. What appearance did it have on the leaves?

A. They would be parched up around the edges and kinder spotted, and the leaves would look like they were rotted, and looked brown.

Q. 31. What effect, if any, did it have on the corn you noticed?

A. I noticed that the silk would dry up, and I have seen the blades of the young corn where it was parched up.

Q. 32. Your garden truck, did you see any effects on that?

A. I never paid much attention to that; I have noticed some beans that way.

Q. 33. On anybody else's gardens or crops have you observed it?

A. I was through some Irish potatoes on Mr. Arnold's place, I believe I noticed that.

Q. 34. How were these potatoes effected?

A. They looked like they was frost bit where the leaves was dried up.

144 Q. 35. What has been your observation with reference to the distribution of this smoke damage, has it been all over the country or has it been about in spots?

A. No sir, it seems to be in streaks; some places is worse than it is in others.

Q. 36. When you observed and saw the smoke, how is the conduct of the smoke with reference to traveling through the hills?

A. I have seen it rolling through there like a fog, but it wasn't a fog, for I know the smoke.

Q. 37. Did it follow certain channels——?

A. Yes sir, it seemed to come through the low gaps in the mountains; it comes in there more than anywhere.

Q. 28. Then would you observe the effects on the timber immediately after that?

A. I have never examined the forests and the forest timber after that.

Q. 39. Have you observed any crops in the line of smoke?

A. I have noticed the fruit trees; the young tender leaves would dry up immediately.

Q. 40. Have you observed any apples falling off this year; if so where?

A. I did early in the Spring in my orchard and Mr. Arnold's and in Mr. Northcutt's there.

Q. 41. Did you observe it on any farm truck besides the corn?

A. I think I did on some Irish potatoes and I think on some young beans, but I never paid much attention to that.

Q. 42. Your place with reference to Mr. Arnold's how are you located?

A. Let's see; West.

Q. 43. Any mountains or hills between you and the Ducktown plants?

A. Yes sir.

Q. 44. How does the effect on your farm compare with those up on these hills and mountain sides facing towards Ducktown?

A. It don't seem to hurt me so bad; I am down under the mountain a little; they are back further up on the mountains or hills, and it hurts them worse.

145 Cross-examination.

By General FOWLER:

Q. 1. I believe you say, Mr. Painter that that smoke has the appearance about the same as a fog?

A. Yes sir, I have seen it that way a few times.

Q. 2. It is the same color of a fog, isn't it?

A. It's mighty nigh the same color.

Q. 3. You very frequently do have fogs there in the mountains?

A. Yes sir.

Q. 4. I believe you further said that the first you noticed it of any consequence was five or six years ago?

A. Somewhere along about that time was the first I ever noticed it.

Q. 5. Wasn't that the first time you ever heard any complaint?

A. I don't know about that; I can't remember.

Q. 6. The first time you ever gave any attention to it then?
A. I heard complaint seven or eight years ago; that is the first I ever noticed it.
Q. 7. Then it was, that some seven or eight years ago you first heard complaint?
A. Yes sir.
Q. —. And four or five years ago you first noticed any effects from it?
A. Been bad, yes sir.
Q. 9. What were the first effects that you noticed?
A. On corn; that was the first effects I noticed.
Q. 10. On the silk of the corn?
A. Yes sir, but I never paid much attention to it along about that time.
Q. 11. You got good crops of corn, didn't you?
A. Reasonably good, but it didn't produce like it used to.
Q. 12. The land has been running down, hasn't it?
A. No sir.
Q. 13. Been fertilized?
A. The best land we got don't produce like it used to.
Q. 14. Any new land?
A. New cleared up and it won't do it.
Q. 15. Your fresh land that you use now, and you didn't use six or eight years ago, you don't know how that land would have produced six or eight year ago, do you?
A. No sir.
146 Q. 16. Did you notice any smoke in there last year of any consequence?
A. I don't know that I noticed much last year.
Q. 17. How was it year before last?
A. I don't remember that; it has been in there some, all of the time, whenever the wind is from the North.
Q 18. You mean that from time to time you would see it?
A. When the wind is from the North you can see it in there any day.
Q. 19. About how often do you have the wind from the North?
A. Along in the Spring it was out of the North pretty near all the time.
Q. 20. Generally the air goes the other way doesn't it?
A. Sometimes it does, and sometimes it don't.
Q. 21. Generally the air currents are to the Northeast, aren't they?
A. Not altogether they ain't.
Q. 22. Generally speaking they are though, aren't they, though sometimes they drift back over there?
A. It was from the North all through May and June of this year, pretty near all the time.
Q. 23. That is something extraordinary, isn't it?
A. Yes sir, it's hardly ever that long at a time.
Q. 24. Have you ever known of such a thing before?

A. I believe it has been from the North more this Spring than I ever seen it.

Q. 25. You didn't notice any effects from this smoke about the 8th of June, did you?

A. Somewhere along about there it was the worst days we had; the 8th and 9th.

Q. 26. It was after that that you noticed this damage to these crops?

A. Yes sir.

Q. 27. And your garden there?

A. Yes sir.

Q. 28. Have you noticed it since then?

A. Yes sir.

Q. 29. When?

A. All along every few days; I noticed that whenever the wind changes from the South to the North, that smoke comes in there.

Q. 30. Did you notice any the 26th and 27th of June?

A. No sir, I don't remember whether I did or not.

147 Q. 31. That the latter part of June?

A. I don't know whether there was any the last of June or not; it was there all along during June.

Q. 32. Have you prepared and presented any claim to this arbitration board?

A. No sir.

Q. 33. How much are you damaged?

A. I don't know sir, I can't tell about that.

Q. 34. Are you contemplating bringing suit against either one of these companies, along with these other gentlemen?

A. I haven't studied anything about it, or talked anything about it at all.

Witness' mileage: 33 Miles.

W. S. HINSON, after being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination.

By Mr. HILL:

Q. 1. Where do you live?

A. In Gilmer County.

Q. 2. In what district or township do you live?

A. I live near Ellijay in the Ellijay District.

Q. 3. How far from Ellijay?

A. Three miles.

Q. 4. Near Youkon?

A. I am East of Youkon, on Carter Kay river.

Q. 5. What is your settlement or section known as, is it the Youkon District, or what do they call it?

A. My native settlement there, I live there in the creek and they call it Owltown on the Caterkay river.

Q. — Do you live near the Owltown Mountain?

A. Yes sir, and the Oak Hill Post Office up on the road there three miles from Ellijay.

Q. 7. That is about how far from the plant of the Tennessee Copper Company?

A. I just couldn't tell you about that.

It is agreed between counsel for the State of Georgia and the defendant that the witness lives 22½ miles, air line from the Tennessee Copper Company, and 25 miles from the Ducktown Sulphur, Copper & Iron Company, in a nearly South direction, a little West of South of the two plants.

148 Q. 8. How long have you been living in that settlement?

A. I have been living there from ten to twelve years.

Q. 9. How long have you been living in Gilmer County?

A. I was born and raised in Gilmer County.

Q 10. Are you familiar with the forest timber lands and the farming interests in that section of the county?

A. Yes sir.

Q. 11. You are a farmer yourself?

A. Yes sir.

Q. 12. State whether or not you have ever noticed any smoke in your section of the country?

A. Yes sir. I have noticed it in there at different times.

Q. 13. Seen it?

A. Yes sir.

Q. 14. What does it look like?

A. It is a heavy smoke that comes over and settles down on the mountains and the valleys.

Q. 15. Can you smell it?

A. Yes sir, sometimes you can.

Q 16. What does it smell like?

A. Like sulphur; like the smoke you smell down there around the plants.

Q. 17. You have been to the plants?

A. Yes sir.

Q. 18. Smell the smoke there?

A. Yes sir.

Q. 19. Which direction would the wind be when you could see it and smell it?

A. You could see most of the smoke there when the wind was from the North and Northwest.

Q. 20. How often have you seen that smoke in there?

A. I can't tell you; I have seen it off and on for the past six or eight years.

Q. 21. To what extent have you seen it in there; much or little of the time?

A. At times it has been bad; I believe I have noticed it worse this year than I have ever before; there was more smoke and heavier.

Q. 22. When did you see it particularly this year?

A. I saw it in there along the latter part of May being so bad,

and along the first of June, the 8th or 9th of June. At that time I was up in the orchard of Mr. Arnold, and the orchard me and my brother owns.

Q. 23. You are a brother of the Mr. Hinson that was here this morning?

149 A. Yes sir. He stays up there on the farm and I went up there on the 8th of June and the smoke was bad; it was worse up there that day than I ever saw it up until about one o'clock, and a little brief wind blowed it off. Before I got to the orchard, I couldn't see the trees very good; it was so heavy on the ground that it looked like the woods were afire. I went on up there and after dinner we went up to the orchard and about one o'clock it got better; there was a little brief wind and blowed it off.

Q. 24. Have you seen any smoke in there since then?

A. Yes sir; the next day where I live there it was bad on the 9th.

Q. 25. How far is that from Arnold's orchard?

A. I expect it's about three miles; my brother lives there at Mr. Northcutt's and has an orchard between Mr. Arnold and the mountain.

Q. 26. Did that smoke that you smelled there in that section smell like the smoke at the plants?

A. Yes sir, on the 8th, it was strong.

Q. 27. Have you seen that same smoke in there and smelled it since that time?

A. Yes sir, one time since that on the mountain.

Q. 28. Did you notice the condition of the orchard and the crops after this smoke was in there?

A. Yes sir.

Q. 29. What was their condition?

A. The orchard seemed to be damaged; it affected the growth on it; that day was on the 8th, I noticed that it looked like they was wilted and wasn't in a healthy condition, and later I was back there again in something like one or two weeks; and this young growth there was dead; I mean the tender young sprouts that come out this year's growth.

Q. 30. How did you say it was effected?

A. It had kinder dried up and was dead; some of the leaves had fallen off the twigs, or either knocked off.

Q. 31. The leaves had fallen off?

A. Yes sir, and some of them still dying.

Q. 32. What effect did it have on the crop of apples?

A. A majority of the crop fell off when they were small,

150 just after the bloom, and then the apples didn't look healthy, and they kept dropping off; they dropped worse when they were small after the bloom, along about the time the bloom shed off the trees.

Q. 33. What does the smoke do to the leaves of the trees?

A. I suppose that it kills them.

Q. 34. I mean what can you see?

A. You mean the fruit trees?

Q. 35. Yes?

A. The first I noticed they sorter crimped up and they keep shedding, and you could tell that something was the matter with them.

Q. 36. Are you familiar with the timber through that section?

A. Yes sir.

Q. 37. What effect does it have on that timber?

A. The leaves of the forest trees turn brown and drop from the twiggs of the trees.

Q. 38. Have you seen smoke in those forests there?

A. Yes sir.

Q. 39. What do you raise on your farm there?

A. I raise wheat, rye, corn, peas, Irish potatoes, and things of that sort.

Q. 40. How have your crops been for the last few years?

A. They have not been as good as they have for a few years back. Take the peas, I haven't had any success at all raising peas.

Q. 41. State whether or not the smoke effects the peas?

A. Well, I think it does.

Q. 42. Does it effect any of the other things you raise?

A. Yes sir, when that smoke comes down on them Irish potatoes and the wheat and the rye, it hurts it bad. I didn't sow any oats at all this year.

Q. 43. Why is that you can't raise them?

A. I think that the smoke kills them.

Q. 44. Did you ever raise any oats in that section?

A. Yes sir.

Q. 45. Is the land suitable for growing oats?

A. Yes sir, and for peas too; we used to raise a lot of peas and corn down there, but we don't do it any more; and the wheat, I had some good wheat land in wheat and had a good stand, about eighteen bushels in one piece. I sowed about eighteen bushels and it
151 seemed like I was going to have a fine crop of wheat there right on up until the wheat bloomed, and when I thrashed it out I got 27½ bushels.

Q. 46. When did that stop growing?

A. Along about the first of June; I haven't taken any notice of the dates.

Q. 47. How high was the wheat at that time?

A. It was up and headed up.

Q. 48. Have a good sized head?

A. Yes sir, nice large heads; it was thrifty looking wheat up until the time it bloomed.

Q. 49. What effect did this smoke have on the corn?

A. I don't know as I could tell you that.

Q. 50. For instance when it is tasseling?

A. When it is tasseling, I think it would have a tendency to kill the bloom and the silk. I have noticed a lot of the silks dry up on the corn, and the corn would come short and wouldn't mature and didn't make as good corn.

Q. 51. I will get you to state how this country was for raising wheat formerly?

A. Well sir, reasonably good, when we had good land; where we put wheat on good land, we had reasonably good crops.

Q. 52. How would you say that crops are this year, as compared to previous years?

A. They are not turning out like they used to.

Cross-examination.

By General FOWLER:

Q. 1. How long have you lived in Owltown?

A. Something like ten or twelve years.

Q. 2. That is something like three or four miles almost due South of where your brother lives on Turniptown?

A. Yes sir. I expect it's a little Southwest of him.

Q. 3. The first you noticed of any smoke coming in there was some six or eight years ago?

A. Yes sir. I have noticed smoke in there on the mountain for the last six or eight years; I wouldn't say positively how long.

152 Q. 4. When did you first notice any damage on the trees?

A. I have noticed damage on the forest for a right smart while.

Q. 5. How many years?

A. Five or six years, perhaps.

Q. 6. How long has it been since you first noticed any damage to the crops; the peas and oats?

A. Three or four or five years.

Q. 7. Do you remember in what year it was that you first noticed any damage to the peas and oats?

A. No, sir. I couldn't be positive, but it has been something like four or five years ago.

Q. 8. When did you quit trying to raise peas and oats?

A. I haven't quit trying to raise peas at all.

Q. 9. When did you last sow peas?

A. I planted peas last year.

Q. 10. You raised peas last year?

A. Not many, I didn't.

Q. 11. Do you know what was the matter with them last year?

A. No, sir, but they didn't grow and mature like they ought.

Q. 12. When did you plant your peas?

A. I planted them along in April or May when I planted corn; I generally follow along and plant them in the corn, between the hills.

Q. 13. When you plowed the corn you plowed the peas?

A. Yes, sir, work them right together. Sometimes I sow them after the wheat harvest.

Q. 14. When you plant peas with the corn, you plant them together?

A. Yes, sir.

Q. 15. Raise any peas year before last?

A. Yes, sir, there was peas on the place.

Q. 16. You say this year, they are not looking good?

A. No, sir; they don't look good. Last year we didn't get many peas. We had a good many planted all over the farm, and I think we got somewhere between ten and fifteen bushels.

Q. 17. What time last year did you notice any smoke in there?

A. I don't remember what time it come in there, but it come in there through growing season.

153 Q. 18. You didn't notice as much last year as this year?

A. No sir.

Q. 19. In the year 1912, you didn't notice as much as this year?

A. No sir, not as much as this year.

Q. 20. Which was the first year, before the present year that it was the worst?

A. I can't tell you sir which was the worst. It has been in there every year, but it seems like it has been worse this year than before.

Q. 21. When was the last time you sowed any oats?

A. Last year.

Q. 22. Have pretty good oats last year?

A. No sir.

Q. 23. What was the matter with them?

A. I don't know sir; I fertilized the ground well.

Q. 24. During the present year, you didn't notice any smoke before the eighth of June, did you?

A. Yes sir, I notice smoke all along through April and May.

Q. 25 What days in May?

A. I disremember the dates in May.

Q. 26. But you didn't notice any bad effects until the 8th of June?

A. That was the first I noticed the orchard. The young corn was bit along the first of June, from that until the 8th of June. I was in different fellows' fields besides my own, and the young corn was bit, and looked like it had been frost bit.

Q. 27. Do you know what did that?

A. No sir. I thought at first that some worm was doing it, and I pulled some of the corn up but I couldn't find any worm there.

Q. 28. Did you let that corn alone?

A. Some of it.

Q. 29. Didn't that corn come right on up?

A. Some of it did, and some of it didn't; some of it never did come up.

Q. 30. But on the 8th of June you noticed the smoke in there pretty badly.

A. Yes sir, the 8th and 9th of June was the worst, in my opinion, those two days, that I ever saw it in there.

Q. 31. It came in along about eleven o'clock?

A. Yes sir, ten to eleven o'clock.

154 Q. 32. You noticed it in there only once since then?

A. Yes sir, I have noticed it in there a right smart since then, 'long every few days after that; then there wasn't any smoke in there for awhile and along in July it was in there again, I think

the 27th of July, or 26th of July, I was in the orchard of Mr. Arnold, and it come in there on that day.

Q. 33. You haven't seen any bad effects yet?

A. The orchard was pretty badly damaged.

Q. 34. But that was from the 8th and 9th?

A. Since the last days, I haven't been back in there and I don't know what it has done, but it was in bad shape.

Q. 35. That smoke looks like a fog, don't it?

A. Yes sir, still you can tell that it is smoke. You ever see the smoke settle in the coves?

Q. 34. No. Isn't it pretty hard to tell it from a fog up there?

A. No sir, you can tell that it's smoke because it comes in there on bright sun-shiny days. Of course in cloudy, dark weather it looks very much like a fog.

Q. 36. You do have fogs, there in the mountains?

A. Yes sir, but not on bright sun-shiny days.

Q. 37. You haven't filed any claim for damages, have you?

A. No sir.

Q. 38. Do you contemplate filing any?

A. I don't know what I might do.

Q. 39. Are you suing either one of the companies?

A. No sir, but I don't know what I might do later.

Redirect examination by Mr. HILL:

Q. —. State whether or not you have ever seen any fogs on bright sun shiny days?

A. No sir.

Q. 2. Have you ever seen any smoke in there on bright sun shiny days?

A. Yes sir.

Mileage of witness: 40 Miles.

155 GEORGE HINSON, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. HILL:

Q. 1. How old are you Mr. Hinson?

A. I am 56 years old.

Q. 2. Where do you live Mr. Hinson?

A. In Gilmer County, close to Ellijay.

Q. 3. How far from W. S. Hinson?

A. About two miles and a half or three.

Q. 4. East course?

A. Yes sir.

Q. 5. About the same distance from the copper plants that he does?

A. Yes sir.

Q. 6. How long have you been living there?

A. Eight or nine years.

Q. 7. How long have you lived in Gilmer County?

A. Ever since I been born nearly.
Q. 8. Were you born in Gilmer County?
A. No sir, I think I was born in Murray County, and moved to Gilmer county when I was young.
Q. 9. You a farmer, Mr. Hinson?
A. Yes sir.
Q. 10. Are you familiar with crop conditions and the fruit trees in that section?
A. Yes sir.
Q. 11. State whether or not you have ever seen any smoke in your section of the country?
A. Yes sir, I have seen a good deal of it in there.
Q. 12. Can you see it?
A. Yes sir.
Q. 13. What does it look like?
A. The smoke.
Q. 14. Yes, what is the color of it?
A. It is a sort of bluish looking smoke.
Q. 15. Can you smell it?
A. Yes sir.
Q. 16. What does it smell like?
A. Like sulphur.
Q. 17. Have you ever been up around these plants?
A. No sir.
Q. 18. How many times have you seen that smoke in there for the past several years?
A. I see it in there most every year for several years.
Q. 19. Have you seen it there this year?
A. Yes sir.
Q. 20. How many times?
A. Through May some, and in June. On the 8th and 9th
156 of June I saw it. It come down there about dinner time that day.
Q. 21. Is that the smoke that you describe as smelling like sulphur?
A. Yes sir.
Q. 22. Where is the wind from when you see the smoke?
A. It is generally from the North.
Q. 23. Have you noticed the condition of the crops and plants after that smoke would come in?
A. Yes sir, I noticed my 'taters; I noticed them after the smoke; they kinder crimped up and looked like they had been burned.
Q. 24. State whether or not that was generally the condition through there after the smoke would come in?
A. Yes sir.
Q. 25. How does it effect *on* corn and things like that?
A. Yes sir, it kinder crimps up and looks like it is burned.
Q. 26. You ever notice the tree leaves?
A. Yes sir, they crimps up sorter and turn brown.
Q. —. How does it effect corn?
A. Something like frost bit.

Q. 27. Did you have any frost after you planted corn at all?
A. No sir.
Q. 28. After the corn comes up and silks and tassels, how does it effect it?
A. It will dry up and fall off.
Q. 29. What effect does that have on the size of the ear?
A. It stunts the corn some.
Q. 30. Make it light and chaffy?
A. Yes sir, I should think it would.
Q. 31. State whether or not it stunts the growth and cuts down the yield of corn?
A. I suppose that it cuts it down; I suppose that the silk supports the corn.
Q. 32. How have the crops been in that section for the past several years?
A. Not as good as they used to be.
Q. 33. Did you live in that section before that smoke ever bothered you?
A. Yes sir.
Q. 34. How do crops now compare with those made then?
A. We don't make more than half as much corn as we used to make when I was a boy.
157 Q. 35. What effect does it have on peas, if you know?
A. I have quit planting peas.
Q. 36. Why?
A. It just killed the peas so bad that I quit.
Q. 37. Didn't have any success with them?
A. No sir.
Q. 38. How about oats, rye and wheat?
A. I ain't sowed any oats; I sowed some wheat, and my wheat this year, after that smoke come down in there, I told the boy——
Q. 39. Don't tell what you told anybody; what was the condition?
A. It just dried up and parched it.
Q. 40. What was the yield from that particular field that this smoke settled on?
A. How much did I make, you mean?
Q. 41. Yes, how was the yield from that field?
A. I sowed fourteen bushels and I got thirty-one.
Q. 42. How many bushels could you get ordinarily?
A. I don't know exactly, I reckon about twenty bushels to the acre.
Q. 43. And you got how many bushels?
A. I sowed about fourteen acres, and I only got thirty-one bushels from the fourteen acres.
Q. 44. How does the crops of wheat, rye, oats and corn compare now with what it was some years ago?
A. It ain't nigh so good as it was.
Q. 45. Are you sowing much wheat and oats now?
A. No sir, we ain't sowing much small grain now like we used to.

Q. 46. Have you noticed the effect on the forests?

A. I have noticed something on the trees that colored them; colored the leaves.

Q. 47. Have you got any timber?

A. The man has that I live on his place. I live on Mr. W. H. Hill's place, and he has got 1200 acres.

Q. 48. Has he an orchard there?

A. Yes sir.

Q. 49. What effect does it have on his orchard?

A. Seems like it has a right smart effect.

Q. 50. How does the crop of apples now compare with those under ordinary conditions?

A. The trees bloomed and shed off their blooms, and he ain't made no apples hardly.

158 Q. 51. State whether or not the smoke which you described on the 8th and 9th of June came in on his orchard?

A. Yes, sir.

Q. 52. What effect did it have on that orchard?

A. A few days after the leaves would wilt up and begin to fall off.

Q. 53. Damaged much?

A. It seemed like the tender young growth was killed on it.

Q. 54. Did the apples stay on or fall off?

A. They are falling off some; some of them are on the trees yet and some are falling off.

Q. 55. When did you first move there?

A. I don't know exactly, but it was eight or nine years ago.

Q. 56. You live on Mr. Hill's place?

A. Yes, sir.

Q. 57. You don't own any land there?

A. No, sir, but I got some up on Turnip Town creek.

Q. 58. How many years after you went there before you noticed any bad effects from the smoke?

A. It was two or three years before I noticed much damage from the smoke.

Q. 59. What was the first damage that you noticed?

A. The first damage that I noticed, I cleared up about six acres of mountain land and put in some Irish potatoes; the vines come out all right and then after the smoke come in they wilted down and stopped growing. I got 175 bushels off of that six acres but they wasn't no count much. That is the first I begin to notice it.

Cross-examination by General FOWLER:

Q. 1. Didn't you never have potato vines to wilt from any other cause?

A. Never did like that before.

Q. 2. You have seen them wilt?

A. Yes, sir.

Q. 3. You have seen them wilt from dry weather?

A. No, sir.

Q. 4. You have known potato patches to fail entirely?

A. Yes, sir, but they had plenty of rain on them.
Q. 5. What year was that?
A. I forget; it was some two or three years after I moved over there.
159 Q. 6. You hadn't seen any smoke in there just previous to seeing those vines wilt up?
A. Yes, sir, I saw it come in there.
Q. 7. How long was that before you saw those potato vines wither?
A. It was just a few days.
Q. 8. What was the next damage you noticed?
A. The next damage I noticed was my peas failing.
Q. 9. What year was that?
A. It was after that a while, I have forgot.
Q. 10. How many years was it after you noticed your potato patch wither, before you noticed your peas wither?
A. I forget.
Q. 11. Two or three years?
A. May not have been so much; I don't recollect now how long it was.
Q. —. How long did you plant peas after that?
A. I guess two or three years, but I didn't get none hardly.
Q. 13. Didn't you try to raise peas last year?
A. No, sir.
Q. 14. Did you plant any year before last?
A. No, sir, I don't think I did.
Q. 15. Haven't been trying to raise any peas for the past three or four years?
A. I forget; maybe two years; two years I believe.
Q. 16. When did you last sow oats?
A. I ain't sowed any oats in three or four years.
Q. 17. You had a wheat field this year?
A. Yes, sir.
Q. 18. And you expected to get twenty bushels to the acre?
A. Yes, sir, I think fully that.
Q. 19. Did you ever raise any wheat like that down there?
A. Yes, sir.
Q. 20. How many acres did you say you had out?
A. Fourteen acres I think; thirteen or fourteen.
Q. 21. And you expected to raise 280 bushels of wheat?
A. I ought to have done it; I have done it before.
Q. 22. When was that, how many years ago?
A. Back several years ago, when I was a boy like.
Q. 23. You don't really know what hurt your wheat?
160 A. No, I don't know for certain, but we claim it to be the smoke that done it.
Q. 24. That smoke that damaged your wheat come in there the 8th and 9th of June?
A. Yes, sir.
Q. 25. Really that is the only smoke you have noticed in there this year that has done any damage?
A. I believe it is.
Q. 26. You have seen smoke in there?

A. Yes, sir.
Q. 27. But that was the only smoke in there that did any damage?
A. Yes, sir, I believe it is.
Q. 28. Have you filed any claim yet.
A. No, sir, but I think Mr. Hill has; I think he has filed one.
Q. —. Did you prepare any claim for him at all?
A. I counted the trees for him.
Q. 30. Those apple trees?
A. Yes, sir, and the peach trees.
Q. 31. Injure any peach trees in there?
A. Yes, sir.
Q. 32. How many apple trees has Mr. Hill got in there?
A. I disremember how many trees he has got; somewhere about 1,000 or 1,500, I guess. I don't recollect exactly.
Q. 33. You know that he has a good many?
A. Yes, sir.

Redirect examination by Mr. HILL:

Q. 1. I believe you stated this; that you had seen smoke in there last May?
A. Yes, sir.
Q. 2. How many times did you see it in there in May?
A. I disremember how many times I saw it there in May.
Q. 3. Was your corn or your wheat bitten along about the first of June?
A. The wheat was bitten the 8th and 9th of June.
Q. 4. How about your corn, when was that bitten?
A. 'Long in May.
Q. 5. That was before the big smoke?
A. Yes, sir.

161 Recross-examination by General FOWLER:

Q. 1. You don't really know that your corn was bitten by the smoke?
A. No, sir, I am not so well acquainted with the smoke. Something does it; I don't know what it is.
Q. 2. Do you have the kind of season out there to grow the corn, you had a late cold season, didn't you?
A. No, sir, I planted a little patch after the cold seasons was over with; I believe along about the first of June a little patch.
Q. 3. That came up about the 8th or 9th of June?
A. No, sir, it was up before that time.
Q. 4. You say that the smoke came in there on the 8th and 9th of June?
A. Yes, sir, I noticed it in there about that time.
Q. 5. You say you planted this patch of corn along about the last of May?
A. Yes, sir.
Q. 6. Wouldn't that patch of corn just have come up then——

A. Yes, sir, it was barely up.
Q. 7. When do you think that smoke come in there that injured that corn?
A. I don't know when.
Q. 8. It must have been along about the first of June?
A. No, sir.
Q. 9. Now when did you plant that corn?
A. I think I planted it in May; may have been along the first of June. I don't know just when. I saw smoke in there in May.
Q. 10. You haven't studied over that matter sufficiently to state just when that corn did get in that condition?
A. No, sir.

Mileage of witness: 40 miles.

J. S. ROGERS, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. HILL:

162 Q. 1. Where do you live Mr. Rogers?
A. Down in Gilmer County.
Q. 2. Do you live near Mr. Hinson who has just gone out?
A. Yes sir.
Q. 3. What do they call that section around there, Owltown?
A. Yes sir, Owltown.
Q. 4. Are you about the same distance that he is from the copper company plants?
A. Yes sir.
Q. 5. Have you ever been up around these copper company plants?
A. Yes sir.
Q. 6. Have you ever smelled that smoke up around there?
A. I reckon I have.
Q. 7. Have you ever seen any smoke down in this section where you live?
A. Yes sir.
Q. 8. What did it look like?
A. It looked like smoke to me, when I saw it.
Q. 9. Could you smell it?
A. Yes sir.
Q. 10. How did that smell compare with the smell of that up around the plants?
A. It compared with it pretty well, but it wasn't so strong.
Q. 11. What sort of smell did it have?
A. A sort of sulphur copper smell; smell like sulphur.
Q. 12. How long have you been living in that section?
A. I have been there for three years.
Q. 13. How long have you lived in Gilmer County?
A. All my life, forty-one years.
Q. 14. Have you seen that smoke in your section?
A. Yes sir.

Q. 15. Have you ever looked at the trees and crops after that smoke would come in there?

A. Yes sir.

Q. 16. What effect would it have on them?

A. When it strikes them it turns them kinder white like and the- wilt and begin to crisp up.

Q. 17. Have you any orchards on your place?

A. Yes sir.

Q. 18. Apples?

A. Yes sir, a few apples.

Q. 19. What effect does it have on these trees?

A. It does them the same way, very much like when
163 frost hits them.

Q. 20. Does it do the forest trees the same way?

A. Yes sir.

Q. 21. What effect does it have on the corn?

A. It does the corn the same way; it will wilt the corn and then it begins to rot.

Q. 22. The corn silk, what does it do to that?

A. It kills the silks the first thing.

Q. 23. That make- the ear smaller or large?

A. It cuts it off.

Q. 24. What about oats, wheat and rye?

A. It ruins it.

Q. 25. Do you grow any wheat, rye or oats?

A. I had some wheat.

Q. 26. How did it do?

A. It nev-r done nothing.

Q. 27. When was that?

A. This year along about the 8th and 9th of June it got that wheat.

Q. 28. Was that smoke in there then?

A. Yes sir.

Q. 29. Did you examine the wheat after that?

A. Yes sir.

Q. 30. Did it have the effect you have just described?

A. Yes sir.

Q. 31. How does the crop of wheat, rye, oats and corn compare with those you used to have eight or ten years ago?

A. Don't compare at all. One acre won't make one-sixteenth of what it used to.

Q. 32. Have you seen that smoke that you have described in there this year?

A. Yes sir.

Q. 33. How many times?

A. I don't know how many times.

Q. 34. You stated that it was in there the 8th and 9th of June. did you see it any other times?

A. Yes sir, I saw it several times.

Q. 35. Have you seen it any since that time?

A. Yes sir.
Q. 36. Was it in there in May?
A. Yes sir, and I have seen some since the 8th and 9th of June.
Q. 37. Which direction would the wind be from when you would see that smoke?
A. It would be from the North.
Q. 38. Did you raise any peas this year?
A. Yes sir, a few.
Q. 39. How did they do?
A. Didn't do no good.
164 Q. 40. Did that smoke or not, that came in there the 8th and 9th of June effect those peas?
A. Yes sir.
Q. 41. Did you see the smoke when it come in on them?
A. Yes sir.
Q. 42. Did you examine them after that?
A. Yes sir.
Q. 43. What was their condition?
A. It looked like there had been a fire or something close to them.
Q. 44. What is the condition of the forests; the timber in the forests after this smoke comes down?
A. You mean on the mountain woods timber?
Q. 45. Yes?
A. You take on the North side of the mountain there where it hits it, the leaves just crisp up and all drops off on the ground.
Q. 46. You see the leaves on the ground?
A. Yes sir; they would fall on the ground.
Q. 47. The fruit trees do the same way?
A. Yes sir.

Cross-examination by GENERAL FOWLER:

Q. 1. How many crops have you made there?
A. This is my third crop.
Q. 2. Where did you live before that?
A. I lived on what is called Turniptown back this side.
Q. 3. What kind of crop was the first you made down there?
A. Pretty fair crop.
Q. 4. That was in 1910, was it?
A. Yes sir.
Q. 5. You made oats that year?
A. No sir.
Q. 6. Didn't you sow any?
A. No sir.
Q. 7. Have any wheat?
A. Yes sir, I had some wheat.
Q. 8. Make pretty good wheat?
A. No sir, the wheat wasn't much.
Q. 9. What was the trouble?

A. I had some of the wheat in bottom land; that was pretty good, then I had some on the North side that wasn't no good.

Q. 10. Your wheat on the North side or on the South side?

A. I had some bottom land and some on the North side of the hill.

165 Q. 11. Corn pretty good that year?

A. Yes sir; I had some pretty good corn.

Q. 12. Raise any peas that year?

A. No sir.

Q. 13. Didn't try that year?

A. Yes sir, I tried all a fellow could.

Q. 14. In 1910, did you plant any peas?

A. Yes sir, I planted some beans.

Q. 15. I said peas?

A. I never made any.

Q. 16. Did you plant any peas in 1910?

A. No, I never planted any peas; I thought you said beans.

Q. 17. Did you raise any corn in 1911?

A. Yes sir.

Q. 18. Have a pretty good crop?

A. Yes sir, a tolerable fair crop; nothing like what we generally do.

Q. 19. What do you mean by generally?

A. I mean a general crop back yonder ten, fifteen or twenty years ago.

Q. 20. When was the first time that you noticed smoke damage in that country?

A. It has been several years.

Q. 21. Five years?

A. Yes sir, five years.

Q. 22. About how many years, has it been six or seven years?

A. I wouldn't say positively; but it has been several years.

Q. 23. Has it been as many as seven years?

A. I wouldn't say seven years; I know that it has been several years I have been seeing what it would do.

Q. 24. Coming down to the present year, have you seen any damage in there this year?

A. Yes sir.

Q. 25. In consequence of that smoke coming in there on the 8th and 9th of June?

A. Yes sir, and before that; smoke has been coming in there all through May.

Q. 26. Did you notice any damage until the 8th and 9th of June?

A. Yes sir, I could see that it hurt everything; take corn so high (indicating) it burned it off.

Q. 27. Did you have some cold weather along then?

A. Yes sir, we had some cold weather.

166 Q. 28. That didn't hurt your corn at all?

A. No sir, not as I could tell.

Q. 29. Don't you know that cold weather in the spring will keep corn back?

A. Yes sir; I have seen it frost bit.
Q. 30. Don't you know that cold weather will make the corn look sickly?
A. Yes sir; cold weather will yellow the corn and the smoke don't; *the* the smoke turns it white and wilts it, and when it hits the young tender corn it parches it up.
Q. 31. And you think before the 8th and 9th of June you saw that?
A. Yes sir. It parched the corn and the fruit trees and every thing else in there.
Q. 32. When did you notice smoke in there after that?
A. I have seen it a time or two since that, but I won't say when it was that I saw it.
A. 33. Did you raise any peas at all?
A. No sir.
Q. 34. Did you raise any peas at all?
A. I never did sow very many; I raise corn.
Q. 35. What kind of oats you sow down in that neighborhood?
A. We don't have very many oats through there. We sow wheat. Rust proof wheat.
Q. 36. Those winter oats or Spring oats?
A. Some sow winter oats and some Spring oats.
Q. 37. Don't those who sow winter oats always get a good crop?
A. I don't know how that is.
Q. 37. How big a place do you own down there?
A. The fellow who owns the place I am on, owns 1100 acres.
Q. 38. You have filed no claim for damages?
A. No sir.
Q. 39. Do you live on the same property Mr. George Hinson lives on?
A. Yes sir.
Q. 40. How close do you live to him?
A. About 200 yards; maybe a little more.
A. 41. You yourself have filed no claim for damages?
A. No sir, I guess that would come under the head of Mr. Hill's.
Q. 42. You all put in your claims together?
167 A. Yes sir, I*m*guess it's that way.

Mileage of Witness: 40 Miles.

J. W. WITHROW, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination.

By Mr. DRAKE:

Q. 1. How old are you?
A. Sixty-four.
Q. 2. Where do you live?
A. In Mountain Town District on Mountain Town Creek.
Q. 3. What direction is that from Ellijay?
A. That's a northwest course.

Q. 4. How long have you lived there?

A. I was born and raised in about three miles of where I now live.

Q. 5. Do you own any land in that neighborhood?

A. Yes sir.

Q. 6. How much?

A. About 500 acres.

Q. 7. Are you acquainted with the crops that grow in that section and the growing timber that grows on the mountains?

A. Yes sir.

Q. 8. In the last few years have you noticed any smoke in there?

A. Yes sir.

Q. 9. What kind have you seen?

A. Well, it's smoke.

Q. 10. What kind of smoke was it; how did it look?

A. It looked kinder like a fog. It would settle down in the fields and on the mountains.

Q. 11. Did you ever smell that smoke?

A. Yes sir.

Q. 12. What did it smell like?

A. It smelled like sulphur.

Q. 13. Have you ever seen any injury in that country from smoke?

A. Yes sir.

Q. 14. What was it to?

A. The timber.

Q. 15. What kind of varieties of timber did it affect mostly?

A. The black oak and the chestnut oak.

Q. 16. At what times did it come in there worst—at what time does it come in there with regard to the wind?

A. When the winds are from the Northeast is when it
168 comes to us.

Q. 17. When was the first time that you recollect seeing it in there?

A. Do you mean this year?

Q. 18. Any year?

A. About nineteen,—about six years ago, I think.

Q. 19. Did you see any effect of that on the timber and on the vegetation after that was gone?

A. Yes sir.

Q. 20. What was the effect?

A. The leaves turned brown.

Q. 21. When did you see it that you remember of after then, or have you seen it,—just describe in your own way how you have seen it?

A. I have seen it most every year, as far as I remember; it is generally worst about the last of August or the first of September; that's when it comes in usually.

Q. 22. Then it showed up on the leaves worse?

A. Yes sir.

Q. 23. Have you seen any smoke in there this year; if so, when?

A. It come in there on the 12th of June one time pretty heavy; and on the 13th of July and the 21st of July.

Q. 24. Did you see any smoke in there any other times this year?

A. No sir, not to amount to anything; those are the only times I noticed it.

Q. 25. Three times it was heavy?

A. Yes sir.

Q. 26. Did you notice any of the effects of it this year?

A. Not very much around me this year; I saw some leaves.

Q. 27. In 1912 or 1913, did you see any smoke in there bad; in bad quantities; if so, describe that and when it was?

A. In 1912, the worst there at my house was I think about the first of September.

Q. 28. About how bad was it,—did you see it yourself and smell it?

A. Yes sir, it injured my apple crop.

Q. 29. What effect did it have on your apples?

A. They just quit growing and didn't ripen and mature.

Q. 30. If they didn't ripen and mature, what became of them?

A. They just fell off on the ground in a few days, or in a few weeks you might say.

169 Q. 31. How much orchard have you, about how much?

A. I can't say exactly, about one thousand trees, I think.

Q. 32. What was the effect on the foliage of the apple trees?

A. It burned the leaves.

Q. 33. What else?

A. They would fall off, and then take the second growth later on in fall.

Q. 34. Have you ever, since 1912, see- it about there damage any of your crops of different kinds?

A. No, I don't think it hurt my crops so much. It hurt my vegetables; my crop of beans and peas and such as that.

Q. 35. I believe you say the wind has to be from the Northeast for it to come over on you?

A. Yes sir.

Q. 36. Do you remember a few years ago when a party of Ducktown people conducted by Mr. Sherman Reese came down to your house?

A. Yes sir.

Q. 37. Did they stop with you?

A. Four of them did.

Q. 38. Did you tell them there was any smoke damage in there?

A. Yes sir.

Q. 39. Tell what you told them?

A. I showed them some apples and I give them some to eat, and they looked at them. I showed them some that was damaged. Some of them was pretty good, and some of them was badly damaged. I didn't take them out and show them any timber.

Q. 40. You did show them the damaged fruit—?

A. Yes sir.

Q. 41. Did you talk to them about the damaged condition of the country, there or not?

A. Yes sir.

Q. 42. Do you remember the names of the people that were along?

A. Clayton, I believe was one, and Horace Smith, I think; I won't be positive; they didn't stay at my house. I wasn't acquainted with the others.

Q. 43. You mean they spent the night with you?

A. Yes sir; they asked me to let them stay all night.

Q. 44. Do you know what they were doing there?

A. No sir, I don't.

Q. 45. They didn't let you know?

A. No sir.

It is agreed by Counsel for the State of Georgia and
170 Counsel for the defendant that the witness lives 18-1/2 miles air line from Copperhill, and 21 miles air line from Isabella, in a direction West of South; nearly Southwest.

Cross-examination.

By GENERAL FOWLER:

Q. 1. I believe you have a suit against the Ducktown Co.?

A. Yes sir.

Q. 2. Pending in the Law Court at Ducktown?

A. Yes sir.

Q. 3. In what year did the damage or damages occur for which you brought that suit?

A. 1912.

Q. 4. You bring that suit this year?

A. Yes sir, this Spring.

Q. 5. Were you damaged in 1911?

A. Yes sir, but not so bad.

Q. 6. Was your apple crop damaged that year?

A. Not so bad as some.

Q. 7. Did you sue alone for damages to your apple trees?

A. No sir.

Q. 8. To all your crop?

A. Yes sir, and timber.

Q. 9. Were you damaged in 1910?

A. Yes sir.

Q. 10. I believe you said that you first noticed this smoke about six years ago?

A. Yes sir.

Q. 11. That would be 1908?

A. Yes sir, I think so.

Q. 12. What was it that you first noticed was damaged?

A. The timber beginning to die.

Q. 13. What was it you noticed?

A. The tops of the white pines begun to die then.

Q. 14. That was the first thing you noticed; the tops of the white pine?

A. Yes sir, and the chestnut oak timber.

Q. 15. Was that before you noticed any injury to your crops?

A. Yes sir.

Q. 16. What was the first crop you noticed any damage to, corn, oats or wheat?

A. No sir, mostly peas and the vegetable crop was damaged.

Q. 17. Do you remember what year that was; that was some four years ago wasn't it?

A. It was 1912 that was the worst year.

Q. 18. Do you remember what month it was that it come in there in 1912?

171 A. Yes, sir, it was the first days of September, or the last of August; right about that time.

Q. 19. That was the smoke that did the injury that year?

A. Yes sir. Really, I think that was the worst I have ever saw in there.

Q. 20. Did that last just one day?

A. Yes sir.

Q. 21. That for just a few hours?

A. Yes sir, it was in there just a few hours; it lasted until nearly twelve o'clock.

Q. 22. Can't you recollect the exact date when that occurred?

A. No sir.

Q. 23. But it was the last days of August or the first day of September?

A. Yes sir, in 1912.

Q. 24. What was the first damage from smoke that you noticed during that year?

A. That was the first; that is why I noticed particular when it was; it was so heavy and smelled so strong.

Q. 25. During the year 1911, what month did you notice Smoke in there in?

Q. It was the worst in August.

Q. 25. Do you remember what day in August?

A. No sir, I can't state.

Q. 26. What was hurt in 1911?

A. It hurt my vegetable crop mostly. My corn wasn't damaged a great deal.

Q. 27. Which vegetables did it specially hurt?

A. My peas and bean-, tomatoes and cabbage.

Q. 28. How many peas did you have?

A. I don't know exactly; I generally sow them to make forage.

Q. 29. How many acres did you sow?

A. Not but a few; four or five I guess.

Q. 30. Did you raise any peas that year?

A. No sir, we didn't get no peas much; the leaves dropped off.

Q. 31. Do you mean that in 1911 it killed your peas absolutely?

A. No sir, not absolutely; they turned brown and wouldn't ma
ture.
Q. 32. You did get some for feed?
A. Yes sir, what leaves there was left, I did.
Q. 33. You used that for feed?
A. Yes sir.
172 Q. 34. What else was injured besides your peas that year
A. That's all I remember; the beans and our vegetables
Q. 35. Beans in the garden?
A. Yes, sir, and in the corn field.
Q. 36. You were just raising a few beans for your own family
use?
A. Yes, sir.
Q. 37. You wasn't raising beans to sell?
A. No, sir, I hardly ever do.
Q. 38. Did you raise the beans in the corn field, that you used
A. Yes, sir.
Q. 39. It didn't destroy your bean crop, did it?
A. No, sir, not entirely.
Q. 40. That was all that was injured in 1911, your peans and
beans?
A. That's all I remember, and the timber was burned some.
Q. 41. There wasn't any trees killed, was there?
A. No, sir, I don't think they died.
Q. 42. What was injured in 1910?
A. I can't tell you now.
Q. 43. In 1909, was there any injury at all?
A. I can't tell you now.
Q. 44. In 1913, did you suffer any injuries from smoke?
A. No great deal.
Q. 45. What special complaint have you got against the com
pany for 1913?
A. I haven't got anything, only I think it injured our vegetables
Q. 46. Which vegetables?
A. Some of the vegetables; it didn't kill them all.
Q. 47. Did you plant any peas in 1913?
A. No sir.
Q. 48. Sow any oats in 1913?
A. No, sir.
Q. 49. How long has it been since you raised any oats?
A. I raised some this year.
Q. 50. Got a pretty good oat crop?
A. Pretty fair.
Q. 51. This Spring or last Fall?
A. Spring.
Q. 52. Do you raise any winter oats there in your section?
A. No sir.
Q. 53. Ever try?
A. No sir; I never sowed any there in the winter.
Q. 54. Isn't that the reason you don't raise oats?
A. I don't know sir, about that.

Q. 55. You don't know it to be a fact that East Tennessee, Southwest Virginia and Kentucky have entirely quit raising
173 Spring oats, because they can't raise them, and have gone to raising winter oats altogether, do you know that to be a fact?

A. I have heard it?

Q. 56. Why don't you people down here raise winter oats?

A. The frost would kill them.

Mr. DRAKE: We except to the question and answer as being irrelevant and immaterial.

Exception overruled. Appeal prayed and granted.

Q. 57. You are quite a distance South of Tennessee, Kentucky and Virginia aren't you?

A. Yes sir.

Q. 58. The climate is warmer in your section than it is up in that country, isn't it?

A. I suppose so; I have never been there.

Q. 59. During the present year when did you notice any smoke at your place?

A. On the 12th of June; 13th of July and 21st of July.

Q. 60. How long was it in there on the 12th of June?

A. It generally comes in there and stays about—it is generally there in the morning and sets up about nine o'clock——

Q. 61. I am talking about this special date, when it come in there?

A. It generally stays in there two or three hours.

Q. 62. Did it hurt anything on that day?

A. I can't say that it did any great deal of damage.

Q. 63. On the 13th of July, much smoke there that day?

A. Yes, sir, that was the heaviest one I saw this year.

Q. 64. What did it hurt?

A. I couldn't see anything at my place.

Q. 65. Injure anything on your place on the 21st of July?

A. No, sir, I couldn't see that it did.

Q. 66. Last year, did it injure you or not last year?

A. It was 1912 that was the worst I have had.

Q. 67. When did the smoke come in there in 1912 and injure you, what month?

A. The last of August or the first of September; the last
174 days of August, or the first of September.

Q. 68. Was it your winter apples that it injured?

A. Yes sir, what we call the Limber Twig.

Q. 69. It didn't hurt them until they were nearly mature?

A. No they wasn't grown quite; they had been turning red, but they didn't turn any more.

Q. 70. Kill the tree?

A. No, sir, the tree is alive yet.

Q. 71. Do you know whether or not dry weather or something of that kind caused these apples to quit growing and to fall off the trees?

A. Not all of them; a good many of them did.

Q. 72. The apples didn't fall off?
A. Yes sir, they dropped off shortly afterwards and rotted.
Q. 73. How many trees did you have at that time?
A. I had about one thousand.
Q. 74. Not all of them winter apples are they?
A. Practically all; but not all.
Q. 75. All of them Limber Twigs?
A. No sir, not all.
Q. 76. What per cent of them are Limber Twigs?
A. I expect 70% to 80% are Limber Twigs.
Q. 77. How is your apple crop this year?
A. Fairly; looks pretty well.
Q. 78. How was it last year?
A. Wasn't much account lasy year; wasn't no good much.
Q. 79. Frost kill it?
A. Yes, sir.

Mileage of witness: 48 miles.

A. E. SHARP, sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. How old are you Mr. Sharp?
A. 47.
175 Q. 2. Where do you live?
A. In Gilmer County.
Q. 3. What point in Gilmer County?
A. In the Turniptown District, eight miles Northwest of Ellijay.
Q. 4. How far do you live from J. W. Withrow who has just testified in this case?
A. One mile.
Q. 5. Which direction?
A. Northwest. His land and mine corners.
Q. 6. How much land do you own *on* that neighborhood?
A. 250 acres.
Q. 7. What is your present occupation?
A. I am a woodsman?
Q. —. How long have you been engaged as a woodsman?
A. Ten years.
Q. 9. In whose employ are you at present?
A. Shippen Bros. Lumber Company.
Q. 10. Have you ever held any position with the State?
A. Yes sir, I have been working for the State for some time.
Q. 11. In what capacity?
A. I have been kinder looking over the woods and getting up testimony and so on for the State.
Q. 12. Have you any official position with the State?
A. Yes sir, I am game warden.
Q. 13. How long have you lived in that community where you are now living?

A. All my life.

Q. 14. Have you, Mr. Sharp, in your experience as a woodsman been over much of the mountain country in Gilmer and Fannin Counties, Georgia; if so to what extent?

A. I have.

Q. 15. Please state some of the parts of North Georgia that you have visited?

A. I have visited pretty well over Gilmer, Fannin and Murray Counties; the mountainous portions; some in Union; some in Lumpkin; but Gilmer, Fannin and Murray, I have been pretty well over the mountain part of it.

Q. 16. In what ways have you traversed these counties that you name?

A. I have gone in different ways; on horse back and in buggies.

Q. 17. Have you always confined yourself to the roads in going through the country?

A. No sir, I did not.

176 Q. 18. How then, did you go?

A. I would go through just any way over the trails, and in places where there wasn't any trails.

Q. 19. In your work, what was part of your duties as woodsman?

A. Looking after the timber of the Shippen Bros. Lumber Co., their lands and timber and so on.

Q. 20. In looking after that, what did you do?

A. I went over their lands and looked to see if any one was trespassing on them in any way.

Q. 21. In all that work of ten years, do you think that you are familiar with the character of the timber that grows in these counties, its habits, etc.?

A. Yes sir, I think so.

Q. 22. Have you, in your travels through these counties in the last ten years seen any smoke?

A. I have.

Q. 23. What kind of smoke have you observed in this section?

A. I have observed different kinds of smoke; I have seen smoke that come from the houses; I have seen smoke that come from places where they burn coal, and I have seen that Ducktown smoke.

Q. 24. Can you tell that kind of smoke when you see it and observe it?

A. Can I tell that kind of smoke?

Q. 25. Yes, can you tell it from the other?

A. Yes sir, there is a difference in the color of it.

Q. 26. Did you ever smell it?

A. Yes, sir.

Q. 27. At what points in Fannin County have you seen this smoke?

A. I have seen it from different places.

Q. 28. Name them?

A. I don't know whether I could name them all or not. I have saw it from Barnes Mountain.

Q. 29. In what part of Fannin County is that?
A. That would be in a Northwestern Direction from here.
Q. 30. How many times have you observed it from that point?
A. Twice only.
Q. 31. Name some other place?
A. I have seen it from Granny Marr mountain.
Q. 32. How many times did you ever see it over there?
A. Twice from there; two different places, but the same
177 day.
Q. 33. Any other place?
A. I saw it from the Cow Pen; that is right on the line between Murray and Fannin County.
Q. 34. Which way from Blue Ridge where we now are?
A. That would be just about, something like near West from here.
Q. 35. Is that a very high mountain there?
A. Yes sir, it's a high mountain.
Q. 36. How much elevation is there at that point?
A. 4167 feet.
Q. 37. Looking from that point towards the copper companies, in which direction were they?
A. A little East of North.
Q. 38. How far from that point to the plants?
A. On an air line you speak of?
Q. 39. Yes?
A. I would say about ten miles; twelve maybe, somewhere along there; that is a rough guess. I have never looked at the map.
Q. 40. Could you see the plants of these companies from there?
A. Yes sir.
Q. 41. Could you distinguish the two pla-ts separately?
A. I could.
Q. 42. Could you see the smoke coming from the two plants separately?
A. Yes sir.
Q. 43. In what direction did you observe this smoke coming?
A. I saw it from the points I have given in different directions. I have seen it go in a Northwest direction; then go Southwest and then in a Southeastern direction.
Q. 44. How far could you distinguish the two columns of smoke?
A. Not very far. I suppose that maybe it would go several miles; that is a few miles anyway; it didn't look to me like it went very far.
Q. 45. From there would you see it coming Southwest?
A. Yes sir, you could see it coming southwest. If it was coming directly towards you it would hide the plants from view and you couldn't see them because the smoke would be so thick; but when the smoke is going from you, you can see them all right.
Q. 46. When was the last time you were up there and saw
178 smoke from these plants coming over into the State of Georgia?
A. You mean Cow Pen mountain?
Q. 47. Yes?

A. Cow Pen was some little bit back; the other places, one of them just last week.

Q. 48. From what other points have you seen it?

A. Another place I saw it was a little Northwest of Epworth at a place called Burnt Church.

Q. 49. Is that a mountain?

A. It's a hill or ridge like.

Q. 50. From what other places have you seen the smoke come over into Fannin County?

A. I don't know. There was several other places I saw it during that trip, but I wasn't acquainted through there.

Q. 51. Have you ever been on Flat Top; if so, when?

A. Yes, sir.

Q. 52. Where is that point at?

A. That will be Southwest of here.

Q. 53. Which way from the plants?

A. It would be South; maybe a little West of South; I don't know exactly; something near that.

Q. 54. About how much elevation has Flat Top got?

A. I can't say as to that.

Q. 55. Is that pretty low, or is it high?

A. No, sir. it's pretty high.

Q. 56. Have you seen it from any other points in Fannin?

A. Yes, sir, in Gilmer County; Flat T is right at the line.

Q. 57. Do you recall any other point you have seen it from in Fannin County?

A. No, sir, I don't believe I can remember any more. I saw it from several different places there traveling along the road there but I wasn't acquainted and didn't know the names of the places along there.

Q. 58. In Gilmer County, what points or mountains have you stood on and seen it in there?

A. I have seen it from Flat Top back here and Aria mountain.

Q. 59. Where is that?

A. It is a little South East; a little East of South.

Q. 60. From the plants, you mean?

A. Yes, sir.

Q. 61. Which way is that from Ellijay?

A. Aria mountain? It's a little east from there.

179 Q. 62. When you are in Ellijay, which direction is it to the Aria mountain?

A. It's a North direction; a little East of North.

Q. 63. Does it lie East or West of the L. & N. Railroad that runs through Gilmer County?

A. East.

Q. 64. At how many points on that mountain did you stand and observe that smoke?

A. I don't know but about twice that I remember of.

Q. 65. Have you seen it from any other mountains East of that Railroad?

A. Yes, sir, on the East Point of the Blue Ridge, East of the Railroad.

Q. 66. How far was that from these plants?

A. I would say that it must be something like 18 or twenty miles.

Q. 67. That a high mountain or a low mountain?

A. High.

Q. 68. Do you know the highest point you saw it?

A. No, sir.

Q. 69. Have you stood on any other mountains West of the L. & N. Railroad in Gilmer County, besides the Flat Top and seen this smoke?

A. I don't know that I have, but there is different places along the Flat Top that takes in and embraces a good big section of the country. There are several places on the Flat Top, and the same way on the Cow Pen; different ranges you can see it from.

Q. 70. How many miles is that long?

A. The Cow Pen, we call it from four to six miles long.

Q. 71. How about Flat Top?

A. Well, Flat Top is three or four miles, we call it.

Q. 72. Do you know where Rocky Face is up near Cherry Log?

A. Yes, sir.

Q. 73. Have you ever been on that mountain?

A. Yes, sir.

Q. 74. Ever see any smoke from there?

A. Yes, sir.

Q. 75. Is that East or West from Cherry Log?

A. East.

Q. 76. Please describe the appearance of that smoke looking at it from these different points, just how it would rise from these stacks at different times?

A. It rose out of the stacks there, and if there was a good heavy current of air it wouldn't rise very high from the stacks
180 before it mixed together; if there wasn't no air current it will rise a number of feet, and then turn off.

Q. 77. What do you mean by a number of feet; how many feet?

A. Looking at it from that distance it would look like it went up something like a hundred or two feet almost perpendicular.

Q. 78. Did you observe it at various times?

A. Yes, sir.

Q. 79. How about observing it break off pretty close to the stack; have you or not seen that at various times?

A. Yes, sir.

Q. 80. At various times you have seen that?

A. Yes, sir.

Q. 81. And from various points?

A. Yes sir.

Q. 82. In your inspections as woodsman, did you observe any—do you know what smoke damage is when you see it?

A. Yes, sir.

Q. 83. Have you observed any of it in your work?
A. Yes, sir, I have.
Q. 84. When was the first that you remember having seen?
A. Well sir, about the first that I remember noticing was something like five to seven years ago.
Q. 85. Where was it?
A. The first that I every remember having seen was right here close to this place, Blue Ridge. I have seen it all along in Gilmer, Fannin and Murray Counties ever since then in certain places and sections.
Q. 86. Have you made any tours of inspection this year?
A. Yes sir.
Q. 87. To what points did these tours carry you and when were they made?
A. I made one about three weeks ago into the East or Ellijay into the Arnold Mountain, and I made two or three tours around there in Gilmer County back in this direction (indicating) from Ellijay, and I made some to Potato Patch mountain whichm is Southwest of here. Then, last Sunday was a week ago I went back in here, Northwest of here into this place I told you about, Barnes Mountain, and that country in there. I work that country pretty often, and then in Gilmer County on Jack River plum to the Tennessee line. I have been all through them mountains.
181 Q. 88. Do you know where Fightin' Town Creek is?
A. Yes sir.
Q. 89. Did you or not cross that on that trip?
A. Yes sir, I crossed at the Southwest there, very near the headwaters.
Q. 90. This trip, you say was made about three weeks ago?
A. A couple of weeks ago.
Q. 91. Did you see any smoke injury on that trip?
A. Yes sir.
Q. 92. Where was it; describe it please?
A. I found some of it down from Epworth. When I turned a West course I didn't go but a mile or two before I begun to strike it. I found that whole country affected more or less. I found some of the sections not effected this year, but they have heretofore; they showed dead branches and tops. I found that to the Southwest of Blue Ridge, there on Barnes Mountain and from there all back in North into the Granny Marr.
Q. 93. All up in that Fightin' Town Creek country, and these mountains you have just described, how far would you say they were from the Tennessee Copper Company and from the Ducktown Copper Company's plants?
A. I suppose around in some of these mountains it would be from five to seven miles; maybe in some places a little closer, and it kept on getting in closer until we got in there; maybe the furtherest point was about eight miles; then coming on down into the Georgia side, it didn't look to be more than three or four miles.
Q. 94. How much time did you spend on that trip?

A. About a week.

Q. 95. Was there much or little smoke damage in there.

A. I saw a great deal of it.

Q. 96. Was there much appreciable damage?

A. There was.

Q. 97. How many trees would you estimate that you saw damaged in there on that trip?

A. That would be impossible to tell; there was some appreciable damage on nearly all of them. I will say the bigger half of them.

Q. 98. How many miles of territory in Fannin County, Georgia, did that cover?

A. It must have been something like, where we traveled, eight or ten miles North and South.

182 Q. 99. How much East and West?

A. I saw the smoke damage as far as I went; I would say from Four to Five Miles.

Q. 100. You inspected a strip of land eight or ten miles North and South and four or five miles wide?

A. Yes sir; from the time it took us to travel over it there was that much, anyway.

Q. 101. What varieties of the forest timbers are most easily effected by this sulphur dioxide?

A. Well sir, black oak, black jack, hickory, chestnut, chestnut oak and persimmon.

Q. 102. What are the visible effects from recent smoke injury to this class of forest timbers?

A. The recent effect is they all crisp up and turn brown like, on the side of the mountains, something similar to frost bite, but not quite so dark; part of the leaves crisp up and brown. Some of the leaves have a part green, and some of them the leaves are all killed.

Q. 103. Have you seen any smoke anywhere else this year?

A. Yes sir.

Q. 104. Whereabouts?

A. In Gilmer County.

Q. 105. Whereabouts in Gilmer County?

A. In the Mountain District.

Q. 106. That the district where you live?

A. Yes sir.

Q. 107. Please describe the conditions there?

A. In that section there it killed the potatoes, a great many of them. I think in that section it killed pretty much all of them, and then on the timber you can see the leaves have turned white and then brown like you will see about in other sections. Back East of Ellijay it is worse than back West.

Q. 108. You say East of Ellijay, is that in the Turnip Town country?

A. Yes sir.

Q. 109. How far from the Arnold and the Northcutt orchards?

A. I found the effects right around and in the orchards.

Q. 110. You know where this orchard is?

A. Yes sir.

Q. 111. When were — there?

A. About three weeks ago, and about five weeks ago; I have been there twice.

Q. 112. When you were first there what conditions did you observe?

183 A. I found that the orchard had been effected by the smoke to a considerable extent; the leaves all crisped up and turned up.

Q. 113. That you say, was five weeks ago?

A. Yes sir.

Q. 114. Do you remember the date of the month, as to what time in July it was?

A. It must have been along about the first of July when I was first there.

Q. 115. What was the condition of these trees generally?

A. A good portion of them were effected by the smoke; the leaves was all crisped up and turned up, and they looked like an apple from the distance; the edges of the leaves was burned and turned under.

Q. 116. What effect did it have on them with respect to the leaves falling; anything like that?

A. Yes sir, I saw a good many of the leaves down, and I noticed that the undergrowth hadn't grown any hardly this year there.

Q. 117. You mean the shoots?

A. Yes sir.

Q. 118. How long had the young shoots grown?

A. Some of them had grown out maybe a foot; most of them only a short distance.

Q. 119. How long would an apple shoot grow, a healthy normal one located in a similar soil; with similar atmospheric conditions that didn't have any smoke applications?

A. They would grow about eighteen inches, and maybe longer.

Q. 120. You spoke of making two trips, what condition did you find it in the second trip?

A. I found it on the last trip that more trees were effected; a good many trees were effected that wasn't when I went there on the first trip. I found it in a worse condition on the second trip.

Q. 121. Have you been up there any time and see any smoke in there?

A. Yes sir, the last trip up there three weeks ago I saw smoke there and smelled it.

Q. 122. Who was with you on that trip, if you know?

184 A. Mr. Clark from Blue Ridge; the two Mr. Shippens and two of the Hinsons; I think maybe three of the Shippens; I think Mr. Frank Shippen's son was along, and the two Hinsons.

Q. 123. Those were the gentlemen who were in here today to testify?

A. Yes sir, I suppose they testified; I saw them in here in town today.

Q. 124. Describe the appearance of the foliage on these trees three weeks ago, as compared with your first trip?

A. The first time I was there it was just beginning to show up; some of the leaves was pretty brown and was dropping off considerable. The last time, the trees that was effected between the first time and the second time looked about like the trees did the first time. The trees I saw the first time looked like the smoke had been in there pretty bad. So did the trees that wasn't hurt the first time.

Q. 125. You mean the trees that was bit between the times you were there?

A. Yes sir.

Q. 126. Did you examine the forests there near that Arnold orchard to see if there was any smoke injury?

A. I did.

Q. 127. What did you find?

A. I found the smoke injury the same as I found it elsewhere. The leaves had turned brown some of them, and had crisped up like the others.

Q. 128. What has been your observation with reference to that smoke as to different localities and in the same neighborhood, did you observe any difference in the conditions in the same locality?

A. Yes sir; there are some localities where it is a great deal worse than in others; they have it worse some years than other years; it depends on the air currents; sometimes we will have them from the same direction for a whole summer; then the smoke will go into some sections and settle down, and maybe right in the center you will find some not damaged. I have saw it back yonder several years ago where it would kill corn when it was young; it would kill one stalk out of a hill and leave the other one. I have saw that several different times.

Q. 129. What has been your observation with reference to
185 the Hemlock timber in this North Georgia section adjacent to these copper plants?

A. It is effected too.

Q. 130. Do you know whether or not Hemlock is easily effected by the smoke?

A. Yes sir, it is. It is very easily effected. White Pine too.

Q. 131. Speaking especially with reference to Hemlock, do you know how this country down here was say twenty years ago before any smoke ever come in here, with respect to Hemlock, whether there was much or little.

A. In certain section- I do. Twenty years ago I wasn't as well acquainted with this country as I am now.

Q. 132. What parts were you familiar with twenty years ago?

A. Southwestern Fannin, Gilmer and Murray.

Q. 133. Was there much or little white pine in those sections at that time, and Hemlock?

A. Yes sir, there was a great deal.

Q. 134. Have you observed any change in these conditions, and if so, what caused it?

A. There is a great deal of change in it, especially in regard to

Hemlock. It is nearly all killed or dead. The white pine is dying too. There has been quite a lot of the white pine cut out, and there is quite a lot of it in the sections where — has been no milling that is dead.

Q. 135. What about the Hemlock, has that been milled out?

A. No sir, the Hemlock was never milled out; it has died out.

Q. 136. Do you know what killed it?

A. The smoke killed it. I don't mean to say that the smoke killed every tree, but the majority of it.

Q. 137. To what extent has been the killing of it in North Fannin County?

A. It has been about killed. Back in those sections of the country where I was, it has been about two-thirds of it killed, or more.

Q. 138. On Flat Top Mountain, did you observe the timber there?

A. I did.

Q. 139. What is its condition; is it effected there or not?

A. It is in some places, but not so bad as it is in the North part of Fannin county.

Q. 140. Do you know how far Flat Top mountain is from these plants; about how far?

A. On an air line course it can't be more than twelve or fifteen miles.

186 Q. 141. Have you observed the condition of the timber on the sides of the mountains facing these plants, and on the sides facing the other way? If so, what is the condition?

A. Well, the damage there is more on the side facing the plants.

Q. 142. Generally speaking has that been your observation in that regard?

A. Yes sir, generally speaking it is that way; while I have seen some damage where it comes through the low gaps, it is, generally speaking, worse next to the furnaces.

Q. 143. On the side fronting the plants?

A. Yes sir.

Q. 144. Speaking about crops and gardens, have you observed that growth in this country for the past few years?

A. Yes sir, I have.

Q. 145. What have you observed with respect to smoke on that?

A. It is hurting it considerable.

Q. 146. In what way?

A. It kills it. I have seen the cabbages killed, and the peas, it kills them every year; and pototoes; it kills them too. In all sections we will find that they can't raise any potatoes to amount to anything. We can't raise peas at all.

Q. 147. How long has it been since you could raise peas?

A. Some five to seven and eight years.

Q. 148. Beans, what about them?

A. They are no good any more.

Q. 149. Has it effected the orchards at your home and in that neighborhood?

A. Yes sir.

Q. 150. In what way?

A. It effects the foliage on them; effects the apples; they don't grow and mature like they used to. I effects them in the growth.

Q. 150. And it also effects the fruit?

A. Yes sir.

Q. 151. Have you described how it effects the apples, if you have I don't remember?

A. Well sir, it blackens one side of the apple from the time it is up the size of the end of your thumb until they are about half grown; they will crack and burst open and drop off, and we get but little fruit. In some places way back up on the mountain
187 there in Gilmer County there is some good fruit, in places protected by the mountain.

Q. 152. Do you know whether or not any apples were raised right around there, or do you know?

A. Yes sir, as a general proposition, right there in that section you could.

Q. 153. Naturally, how is that country for apples?

A. It is good.

Q. 154. Have you observed the effect of the smoke on corn when it was up and tasseling, and if so how?

A. I have seen it when it was up and tasseling, and the silk would be killed, and the tassels turn white.

Q. 155. What effect would that have on the corn crop?

A. It is injurious to the corn crop and would kill it. When it comes in there it will kill the silk of the corn, and if the silk stays killed it don't make anything worth anything. Not near as good as it used to be.

Q. 156. Have you observed the effect on oats, wheat and rye?

A. It effects it about the same way. It effects the bloom or the pollen. Back there in one section of Gilmer County they don't raise any wheat at all any more.

Q. 157. That fine rich land for wheat?

A. Yes sir, we used to raise good wheat there, or anywhere in that section.

Q. 158. Who was with you on that trip to Flat Top mountain two or three weeks ago?

A. I was there by myself.

Q. 159. Were you at any time on the mountains with Mr. Lee Worsham and the Shippens?

A. No sir, I wasn't with them.

Mr. DRAKE: We will want to identify some locations by Mr. Sharp of some photographs that have been taken and are now in Atlanta; we will have to put him up again for that purpose and for that purpose only.

Cross-examination by General FOWLER:

Q. 1. How long have you been working for Shippen Bros.?

A. About ten years.

Q. 2. You are their woodsman?

A. Yes sir.

188 Q. 3. You have been their woodsman all that time?

A. Pretty near all the time.

Q. 4. I believe they have about 108,000 acres of land in North Georgia?

A. Something like that.

Q. 5. That extends over what counties?

A. Gilmer, Fannin, Murray and possibly some in some other county; but the principal part is in those three counties.

Q. 6. It is your duty to look after the timber on all of those lands?

A. Yes sir, the best I can.

Q. 7. That requires you to go over the land from time to time to see whether or not there are any squatters or anything of that kind?

A. Yes sir.

Q. 8. I believe the Shippens have been engaged in litigation with the copper companies for some time, at least with the Ducktown Company?

A. I suppose they have for some time; that is for a year or so.

Q. —. They have for two or three years, haven't they?

A. Not that I remember of.

Q. 10. You know that they have a suit pending in the court at Knoxville, don't you?

A. Yes sir, I think so.

Q. 11. Has it not been pending for eight years or over?

A. Not to my knowledge. I know it has been for something like a year or so ago.

Q. 12. You testified in that case, didn't you?

A. Yes sir; that was the first I knowed of it.

Q. 13. That case has been heard, but not passed upon by the judge?

A. That is my understanding about it.

Q. 14. You looked up practically all of the evidence for the Shippens didn't you?

A. No sir. Not all of it.

Q. 15. You looked up the greater part of it, didn't you?

A. I helped to get up the testimony, but I don't know how much there was in it.

Q. 16. You scoured the whole country over to get witnesses in that case, didn't you?

A. No sir, I can't say that I did. I went to look some of them up and helped some on it. I didn't come to Fannin here to

189 get any witnesses.

Q. 17. You knew that you were going to testify yourself sometime before you did testify?

A. I did some little bit before. I don't know that I knew of it a long time beforehand.

Q. 18. Hence, when you were going through the country and through the forests, you were looking for evidence against the Ducktown Company.

A. Certainly I was; I was on that business.

Q. 19. You tried to see every bit of the damage that had been done by smoke?

A. I was looking at the damage.

Q. 20. You were really trying to see all you could so that you could make it as strong as possible?

A. Yes sir, I tried to make it as strong as I could make it reasonable.

Q. 21. I believe you stated that you were also employed by the State of Georgia to look up evidence?

A. I didn't say employed by the State to look up evidence; if I did, I made a mistake. I said I was working now getting up evidence in this case; that is what I meant; I went over the country and looked over the situation as I have stated here.

Q. 22. Isn't it the truth that the State of Georgia employed you to look up the evidence?

A. No sir.

Q. 23. Who got you to look this evidence up?

A. I can't answer that question.

Q. 24. Who was it that asked you to look up this evidence?

A. Me and Mr. Drake had a talk; him and Mr. Shippen talked about it; both of the Shippens, and I don't know that any one person employed me to do this work.

Q. 25. Who was it that got you to go and get up the evidence?

A. Well sir, it was as much my own talk as anybody else's.

Q. 26. Are you specially interested against the Ducktown Co.?

A. I am so far as I believe they are doing damage; I am interested just like any other citizen.

Q. 27. Do you own any land anywhere?

A. Yes sir.

Q. 28. How much?

A. 250 acres.

190 Q. 29. Where is that?

A. In the mountain district.

Q. —. Has that been damaged any?

A. Yes sir.

Q. 31. How much?

A. I can't say as to that.

Q. 32. Have you put in any claim for that?

A. I haven't.

Q. 33. It not enough for you to put in a claim for?

A. Yes sir, if I was able to put the thing through, but I am not able to put in any claim.

Q. 34. You haven't filed any claim with this board?

A. No sir.

Q. 35. It don't cost you anything to put in a claim with this board does it?

A. No sir, and you don't get anything.

Q. 36. Thes- arbitrators decide against you?

A. No, but they haven't got but $16,000 and that's always gone before our county gets any.

Q. 37. Isn't it a fact that when a claim is made they always go and inspect the various places?

A. I don't know sir; I never filed any claim.

Q. 38. Going back to your action in getting up this testimony, did Mr. Shippen ask you to go and get this testimony?

A. I don't know that he asked me about it in particular.

Q. 39. He suggested it to you didn't he?

A. Yes sir.

Q. 40. Did you go at his suggestion?

A. Partly I did, and partly on my own accord.

Q. 41. How much time have you spent in looking up testimony in this case against the Ducktown Company?

A. Not much.

Q. 42. How much?

A. Not over a couple of weeks all told.

Q. 43. A number of the witnesses appearing here are from the various counties; their names have been given to counsel for the State by you; is that true?

A. No sir.

Q. 44. How many names have you given him?

A. To tell you the truth, I don't know that I have given him one.

Q. 45. To whom did you give the names,—to Mr. Shippen?

A. No, I don't now that I did. I may have given him some of the names. I could have went further with it, and I expect I have talked with Mr. Frank Shippen about it, but I really can't
191 say whether I suggested any names to him or not, but I may have give him some names.

Q. 46. You traveled quite a large part of Gilmer and Fannin County, and some in Murray, conversing with people and getting up their names?

A. Yes sir, but I didn't travel over Murray.

Q. 47. You did travel over Gilmer and Fannin County conversing with people to find out what they would swear?

A. I did.

Q. 48. Then did you give that information to anybody?

A. Yes sir, in this way. I would talk with persons where they were effected and find out what they said; I don't know that I give the names of any particular witnesses. I have told Mr. Shippen and also Mr. Drake what these people said about their corn, potatoes and their timber, and I left it with them to say whether they wanted them or not.

Q. 49. You gave their names to either Mr. Shippen or Mr. Drake?

A. Part of them; a few of them, I did.

Q. 50. You told them where the affected districts were?

A. Yes sir. I made a trip through Fightin' Town and I told Mr. Frank Shippen about some potatoes being killed, and told him who it was, and that possibly they might make a good witness, and that's about all I remember of, while I might have furnished him with more than that.

Q. 51. How many trips have you made looking after testimony in this case?

A. I went in all about five trips, I reckon.

Q. 52. Anybody go with you?

A. I think three or four of the trips Mr. Shippen went with me. I went out to Arnold's orchard twice; went through Board Town one trip and one trip through 'tater patch, and I think Mr. Shippen was with me on them trips.

Q. 53. How many of the Shippen Brothers are there?

A. Two. Mr. Frank Shippen has got a son; he went with us one trip.

Q. 54. When I speak of Mr. Shippen, I mean Mr. Will Shippen?

A. Mr. Will Shippen was with me on one trip.

Q. 55. Then, the Shippens were with you on all of your trips but one?

A. All but two.

192 Q. 56. Who else was with you, on these trips besides the Shippens?

A. The second trip I made to Arnold's orchard there was two or three of the Shippens; Mr. Will and Mr. Frank Shippen and Mr. Frank Shippen's son, and the two Hinsons; that is the time we went through the orchard.

Q. 57. You wasn't with Dr. Hedgecock on his trips were you?

A. No sir.

Q. 58. Now, Mr. Sharpe you have mentioned a number of points from which you viewed the stacks of these companies, now, as a matter of fact, you couldn't see the stack of the Ducktown company from near all of these points, could you?

A. Here's what I stated; if I could see the smoke coming out of the stacks, I stated it. I couldn't make out the whole stack from some of these points mentioned, but there is a point on Frog Mountain on the edge of the Tennessee line where you can see the whole stack.

Q. 59. From these other points you couldn't see the stacks of the Ducktown Company at all?

A. Yes sir, the top of it.

Q. 60. With your natural eye?

A. Yes sir.

Q. 61. How much of it could you see?

A. Not much of it.

Q. 62. Do you know how large the top of the stack of the Ducktown Company is?

A. No sir.

Q. 63. Don't you know that it is only four feet in diameter?

A. No sir.

Q. 64. You pretend to say that you can see the top of that stack from the top of those mountains?

A. Yes sir, I pretend to say that I can see the top of it. You could see the whole of the stack from nearly all of these points I have mentioned if it wasn't for the houses.

Q. 65. You are dead sure of that?

A. Yes sir, and there ain't any question about — and you will find plenty others that have seen it.

Q. 66. You have seen it from that big hill South and West of it?

A. No sir, a little knoll there South or Southwest; there is a pretty large hill back West of it. If I remember right the plants set back in this direction (indicating) and the hill is in Georgia.

193 Q. 67. You don't know the difference between the furnace stack and the power stack?

A. Yes sir, I think I do.

Q. 68. Don't you know that that smoke was coming out of the power stack?

A. No sir, I don't. I saw it coming out of the furnace stack.

Q. 69. Didn't you see smoke coming out of the Boro-Boro mine?

A. Yes sir, but I didn't see that as plain as I could see the Ducktown stack.

Q. 70. How many times have you stood off and seen the smoke coming out of half a dozen stacks.

A. More than that.

Q. 71. A dozen.

A. Yes sir, more than that.

Q. 72. Tell from what points on the mountains you have stood and have seen the smoke coming from the stacks of both of these companies?

A. Well, there is one point on Granny Marr mountain that you can see both the stacks; then there is a point on Barnes mountain you can see the top of the stack; see the smoke boiling out of the top of the stack; you can see the same thing on Cow Pen; the same thing on Frog Mountain; you can see the same thing right at the Tennessee line; you can see the smoke after it leaves the stock.

Q. 73. Now as a matter of fact, wasn't there mountains between you and the stack?

A. Part of it, yes sir.

Q. 74. You have seen different kinds of smoke in the mountains?

A. Yes sir.

Q. 75. Have you ever seen any smoke over there from the power plants or from the Boro-Boro mine?

A. I suppose so.

Q. 76. Don't you know?

A. I probably have.

Q. 77. What kind of smoke is that?

A. It's a black smoke; then there is some white looking smoke; it don't look like this smoke; it's not the same color.

Q. 78. What is the difference?

A. I don't know as I could say. When I would see the other smoke you could barely distinguish it from the other. I know the smoke when I see it.

Q. 79. Doesn't the mine produce more smoke than the furnace?

A. I can't say that it does.

194 Q. 80. Do you know what makes the smoke at the mine?

A. I don't know.

Q. 81. Is it coal smoke?
A. Yes sir that is coal smoke there at the mine, or what they said was the mine.
Q. 82. And coal smoke at the power plants?
A. Yes sir.
Q. 83. Does that coal smoke ever fly over into Georgia?
A. I should think so. It all comes from the same direction.
Q. 84. Have you ever seen any of that smoke in Gilmer County?
A. I don't know sir.
Q. 85. You have seen smoke that you thought came from Copper Hill and Isabella?
A. I thought so, yes sir.
Q. 86. You don't know whether it did or not?
A. I have the best reasons to believe that it does.
Q. 87. You have never been at the top of the mountain and see it come into Gilmer County?
A. Yes sir; come into Georgia and into Gilmer County.
Q. 88. When and where?
A. Last Thursday or Friday was a week ago.
Q. 89. Last Friday was a week ago was the only time you ever saw it go into Gilmer County?
A. Yes sir, and I think I will be able to show beyond any question that it did it?
Q. 90. What day of the month was it?
A. If I am not mistaken it was last Friday a week ago. No, let me see; last Friday, I believe it was.
Q. 91. Why didn't you tell about that a while ago?
A. Because I didn't think about it, and I wasn't asked about it.
Q. 92. Where was you when you saw that smoke?
A. Over on Cow Pen Mountain.
Q. 93. How many times?
A. This year once or twice, I can't give no dates, and last year and year before last.
Q. 94. And when you want to see smoke you go up on Cow Pen Mountain?
A. If I want to go on that business. If you will go up there and stay long enough, you will see it.
Q. 95. When was it that you first began to notice smoke in this section?
A. From five to seven years ago, I begun to notice the effects of it.
195 Q. 96. Was it 1907?
A. I can't say positively, but somewhere along there, 1907 or 1908.
Q. 97. What was it you first noticed?
A. The first thing I noticed, the timber begun to die.
Q. 98. What timber?
A. The hickory died the quickest of anything.
Q. 99. Did you ever examine the hickory to see what killed it?
A. No sir.
Q. 100. Do you know what killed it?

A. I couldn't say positively at that time, but the trees commenced to die in the tops; it would be effected a little every year and eventually killed it.

Q. 101. Haven't you seen hickory die in other parts of the country?

A. I have.

Q. 102. Where did you come from?

A. Georgia, Gilmer County.

Q. 103. You have never examined timber outside of North Georgia?

A. Not to amount to anything. I have been out in North Carolina.

Q. 104. You don't know for a fact that timber is dying elsewhere in the Appalachian Region?

A. No sir.

Q 105. You have never studied the diseases of timber?

A. No sir.

Q 106. You have never studied the diseases of chestnut timber or hickory?

A. No sir.

Q. 107. Nor Hemlock, nor white pine or any of these different timbers?

A. No sir.

Q. 108. You have just attributed everything you have seen to smoke?

A. No, I said a while ago I didn't, but I attribute the bigger per cent to smoke. I know that some trees are struck by lightning and some of them die of old age, and then there are fires, but I attribute most of the dead timber in Gilmer and Fannin County to the smoke.

Q. 109. Isn't it a fact that nearly all of the timber in Gilmer and Fannin County has been cut over?

A. No sir. A great deal of it has been cut over, and there is a great deal that has never been saw-milled, and never cut at all.

196 Q. 110. What percentage belonging to the Shippens has been cut?

A. Only a small percentage.

Q. 111. What percent?

A. I can't tell you?

Q. 112. Give us a guess?

A. Of what they own, I wouldn't think over 10,000 acres has been cut over.

Q. 113. How much of the land on which they simply own a timber interest has been cut?

A. I couldn't say; there has been a little more of that cut in proportion, than the other.

Q. 114. On how much of it do they simply own the timber interest?

A. I can't say as to that.

Q. 115. Give us a guess?

A. I would say from 65,000 to 70,000 acres; that is the Shippen Bros. Lumber Company.

Q. 116. Have they cut over in all, as much as 20,000 acres?

A. You mean both kinds?

Q. 117. Yes?

A. I suppose something like that; I don't know, but they have cut a right smart, but I wouldn't hardly think they have cut as much as 20,000 acres.

Q. 118. Isn't it true that nearly all of the timber lands in North Georgia have been bought up by a few companies?

A. Yes sir, I think the bigger part of them have been.

Q. 119. Haven't these companies been operating for several years in the North Georgia section?

A. Nobody has been operating in our county but the Shippen Bros. Lumber Company.

Mr. DRAKE: We except to the question and answer as being irrelevant. Exception overruled. Appeal prayed and granted.

Q. 120. Haven't these various companies erected saw-mills and cut a number of sections of Gilmer and Fannin counties?

A. Yes sir.

Q. 121. And the lands in the immediate vicinity of these saw mills have been cut?

A. Yes sir.

Q. 122. When these lands are cut over, it leaves the laps through the woods?

A. Yes sir.

197 Q. 123. And of course the falling tree will injure many of the small trees in that immediate vicinity?

A. Yes sir.

Q. 124. Then these dead laps lying in the woods, when there is a forest fire, they catch on fire?

A. Yes sir.

Q. 125. And that makes forest fires in that section especially deadly?

A. Yes sir, sometimes it makes it more so than it would where there are no laps.

Q. 126. Isn't it a fact that there have been many forest fires in North Georgia?

A. Yes sir, there has been fires.

Q. 127. Don't the woods burn off nearly every year?

A. Certain sections do. Maybe you will have it in one section one year and the next year another. We have good deal of fire in the woods.

Q. 128. These forest fires are especially injurious to the small growth and the underbrush?

A. Yes sir, that is all hurt.

Q. 129. These fires do hurt the underbrush?

A. Yes sir; it kills the small underbrush.

Q. 130. It kills out the moss and the stubble and all of the small stuff that grows right at the ground?

A. Yes sir; it kills that.

Q. 131. It destroys that undergrowth that fills the soil with roots?

A. Yes sir, it destroys a great deal of that; it destroys the undergrowth, and kills out all such as that.

Q. 132. That is the stuff that holds the soil together on these mountains isn't it?

A. Yes sir; that is one of the things that holds it together; these small roots.

Q. 133. Have you ever seen any place where this herbage and undergrowth and vegetation that grows right, along on the soil has been destroyed in these forests have you?

A. I think I have seen it on Barnes Mountain where it was injured a right smart.

Q. 134. How big a spot did you see?

A. Acres and acres.

Q. 135. How many?

A. Five acres, I guess; I never saw so much of the un-
198 derbrush but I saw where it was injured in spots.

Q. 136. Have you ever seen one spot where the underbrush has been killed by the smoke?

A. I don't know whether I have or not. I can't answer that.

Q. 137. You say that some of the trees in the forest began to be effected in the tops?

A. Yes sir.

Q. 138. Some six or seven years ago?

A. Yes sir.

Q. 139. And the first variety was the hickory?

A. Yes sir, that is about the first I noticed; hickory or chestnut.

Q. 140. In regard to your chestnut, you don't know it to be a fact that there is a fung-us disease in the Appalachian mountains that is killing the chestnut?

A. I don't know, myself.

Q. 141. Have you ever made an examination of the roots of the chestnut trees to see what was the matter with the roots?

A. No sir.

Q. 142. You don't really know what killed the tree?

A. No sir, I can't say. I know that the tree would commence to die in the top. At the bottom it would be all right, but at the top it would be dead.

Q. 144. Don't you know that the disease of the root cause- the tree to be effected at the top because it is the furthrest from the root?

A. I don't know; I wouldn't answer that.

Q. 145. Isn't it true that the tree receives the moisture from the soil through the roots?

A. I should think so, yes sir.

Q. 146. Naturally wouldn't the top of the tree be the first to be effected?

A. I don't know about that.

Q. 147. So you are really guessing at it when you say that you think that this smoke killed the chestnut trees?

A. I will tell you how I think so. I would pass a place like to-

day, and the smoke would come in there like tomorrow. The trees would be perfactly healthy and green, and then come back in a few days and see these same trees dying, and you would know that the smoke had been in there heavy a few days before, and you would see the tops of the trees dying; the leaves turning brown and all crisped up, you would think that the smoke done it and that's the reason I saw that the smoke killed them.

199 Q. 148. Have you ever seen anything like that exactly?

A. Yes sir.

Q. 149. Where these trees would brown that way, would they never come out again?

A. I have seen them when they didn't come out again.

Q. 150. When did you ever see a tree die from the effects of being browned once by the smoke?

A. I saw one place there.

Q. 151. Where was that?

A. On my place at home.

Q. —. How many of them?

A. I don't know; half a dozen.

Q. 153. What kind?

A. White Pines. That was so far as I could see. They might have been effected badly before that, I don't know; then I have seen the tops dies years before that, and then finally die

Q. 154. You know that white pine is an evergreen?

A. Yes sir.

Q. 155. If it had ever been burned by that smoke you could tell it couldn't you?

A. No sir.

Q. 156. Don't you know that the tops and blades of the leaves turn red?

A. Yes sir.

Q. 157. It would attract your attention as far as you could see the tree wouldn't it?

A. Yes sir.

Q. 158. And you never saw these particular white pines effected but this one time, you don't pretend to say, do you that they could have been effected, and you were not able to tell it?

A. They might or might not. I didn't see those trees more than once a year.

Q. 159. How near were those white pines to you?

A. They were a good piece from my home; half a mile I reckon.

Q. 160. You saw them every month, didn't you?

A. No sir; I have got trees on my place I never have saw.

Q. 161. So it is, you think that you have five or six pines which have been baptised by smoke and at once they died?

A. Yes sir.

Q. 162. And they are the only ones you ever saw?

A. No sir, I have saw them in other places.

Q. 163. You won't swear that they died from smoke disease?

A. Just like I said a while ago, I will swear they died
200 from the smoke disease when I see it in there on them.

Q. 164. Suppose that you knew that it had only scorched them one time; that wouldn't kill a tree would it?

A. If I knew positively that it didn't do it, I would consider that it would.

Q. 165. What time of the year were they scorched?

A. In May.

Q. 166. Were the white pines effected?

A. There wasn't much difference in the white pines and the chestnut oaks, as well as I observed.

Q. 167. Isn't it a fact that the white pines have been dying all over this mountain region for years?

A. Yes sir; some of them have been dying all the time ever since I can remember.

Q. 168. Haven't you seen dead white pines standing along the mountain streams ever since you were a boy?

A. Yes sir.

Q. 169. Do you know what killed them?

A. Some from one thing and some from another.

Q. 170. Regarding the Hemlock, some of that dying?

A. Yes sir.

Q. 171. You don't know from what disease the hemlock dies?

A. No sir.

Q. 172. You do know that it dies from disease?

A. I don't know, but I think so.

Q. 173. You have been seeing dead hemlock since you were a child?

A. Yes sir.

Q. 174. Don't you know it to be a fact that in some sections of the country fifty miles away, that practically all of the hemlock is dead?

A. No sir.

Q. 175. And that the same is true with reference to chestnut in some sections?

A. No sir. I don't know that it is or that it isn't.

Q. 176. In this North Georgia Section here you see stretches of miles and miles that all the forests are perfectly green?

A. Yes sir.

Q. 177. You see that every year?

A. Yes sir.

Q. 178. As a matter of fact, haven't you got to hunt here and there to find patches that have been effected by the smoke?

201 A. I don't know so much about that; you can go most anywhere in this section here and find some effected by the smoke; mighty near any where you go; I mean through this section here close to the furnaces.

Q. 179. Do you say that it is effected by smoke, or are you just guessing at it?

A. I am not guessing at it; but by seeing the smoke in there, and then seeing the damage; I take it to be smoke. I am no botan-

ist and I can't say in regard to that; but I base my opinion in regard to it by seeing the smoke, and then seeing the damage.

Q. 180. Did you ever make a study of this smoke disease?

A. I don't know whether I understand your question.

Q. 181. Did you ever really read up on the matter and make a scientific study of it?

A. No sir.

Q. 182. You just pass through the forest and see dead leaves and say smoke?

A. What I know about smoke is having been mixed up with it for a number of years.

Q. 183. When you pass through a forest and see leaves certain colors you say that smoke did it?

A. Yes, in one sense I do. I see leaves that I know have been effected by the smoke, and when I see other leaves exactly the same way, I say that it is smoke.

Q. 184. Don't you know that there are diseases that effect trees in almost exactly the same way?

A. Yes, that may be true.

Q. 185. If you see a leaf that looks similar to that scorched by smoke you say that it is smoke?

A. If it looks like the leaf that has been scorched by smoke, I say it.

Q. 186. Suppose that it looks a little different, would you say it was smoke?

A. I wouldn't say it, if it did look different.

Q. 187. Could you tell it, if it looked exactly like another leaf that had been scorched?

A. I couldn't tell exactly, and if I am not satisfied I wouldn't say it. I wouldn't say that a tree was scorched by smoke unless I was satisfied that it was.

202 Q. 188. Have you examined the various specimens filed here by your expert?

A. No sir.

Q. 189. Have you furnished any specimens to these gentlemen?

A. No sir. I carried some into the office, but I don't suppose that any of them are here.

Q. 190. Tell us how a leaf looks when it has been scorched by smoke?

A. It looks brown and is generally crisped up.

Q. 191. How badly does it brown?

A. Sometimes it crisps up around the edges, and some times it is brown too.

Q. 192. Have you ever taken the leaves for examination right straight through to see what the characteristics were?

A. I have pulled them off and looked at them.

Q. 193. Don't you know that you could go through the forest and see leaves effected by different diseases that would look exactly like it had been scorched by smoke?

A. It might be, I don't know whether I could or not. I can't answer that question.

Q. 194. Do you know where this exhibit No. 37 filed by Dr. Hedgecock came from?

A. No sir.

Q. 195. Look at that and see what kind of a leaf it is (hands leaf to witness).

A. That is black oak or black jack.

Q. 196. What disease did that die of?

A. It looks like smoke sir.

Q. 197. Do you know whether it did or not?

A. It looks to me like it; I wouldn't say.

Q. 198. Don't it look exactly like frost had fallen on it?

A. No sir, not to me.

Q. 199. Don't it look exactly like it had been dried up by frost?

A. No sir.

Q. 200. Don't you know from what mountain that was taken?

A. No sir, I don't know anything about it.

203 Q. 201. Here's another one that has every appearance of smoke burns on it too, doesn't it, even more so than the other one?

A. Yes sir, that has the appearance of smoke on it.

Q. 202. Would you say that was burned by smoke?

A. Yes sir, I would. From the best of my knowledge it is.

Q. 203. You think that has been yellowed by smoke?

A. Yes sir.

Q. 204. This is FP 15029, Exhibit "C" to Dr. Hedgecock's testimony. I now hand you FP-15017, Exhibit "A" to Dr. Hedgecock's testimony, state whether or not that was burned by smoke?

A. It looks like it to me, sir.

Q. 205. Has every appearance of it?

A. It looks to me like it *it* does.

Q. 206. So, if the professor thinks that is not burned by smoke, he don't know what he is talking about?

A. No sir, I don't say that. I said that it looks to me like smoke.

Q. 207. So that is the way you judge the trees; you look at them like you did at this, see the leaves brown and say, well that is smoke?

A. Yes sir.

Q. 208. You don't say that this is the only disease in these mountains?

A. No sir.

Q. 209. I believe you have given one place, or stretch eight miles in length and three or four miles wide that you said had been scorched by smoke?

A. Yes sir.

Q. 210. When did you see that?

A. Last week.

Q. 211. That the biggest place you saw?

A. Yes sir.

Q. 212. You have seen stretches of miles and miles where you couldn't detect it at all?

A. No sir; as I stated -while ago you can see some sign of it most anywhere in this section.

Q. 213. What signs do you see?

A. You see the leaves crisped up and burned.

Q. 214. How many on a tree?

A. I couldn't tell you about that.

Q. 215. No one would notice it would they, unless they had their eye on the lookout for trees effected by smoke?

204 A. Some wouldn't see it in passing, in some places.

Q. 216. Have you noticed around Blue Ridge?

A. No sir.

Q. 217. You have been around here for how long?

A. I have been here two days. I came here night before last and left yesterday at twelve o'clock and came back today.

Q. 217. This is about half as far from these furnaces as to where you live?

A. Yes sir.

Q. 218. And almost in a direct line?

A. Yes sir.

Q. 219. And Blue Ridge is one of the lowest gaps in these mountains isn't it?

A. Yes sir, and three or four years ago this was all burnt up too.

Q. 220. This year, there isn't a scorch is there?

A. I haven't noticed any; I haven't paid any attention.

Q. 221. You can look right around there and see a good corn patch can't you?

A. I don't know I haven't looked at that.

Q. 222. You haven't got an eye in Blue Ridge for burned leaves?

A. I haven't looked for anything here; I didn't come down here to look for smoke here.

Q. 223. How many dead trees to the acre through this North Georgia country?

A. I couldn't tell you.

Q. 224. Two or three?

A. In some places there is as high as thirty or forty.

Q. 225. And in some places none?

A. Yes sir, I can pick out acres that haven't a single dead tree, and then I can show you places where there is 50% to 60% dead.

Q. 226. As a matter of fact, Mr. Sharp, this smoke comes into this North Georgia country just a few days in the year; is that true?

A. It comes in here; I don't know what time of the year, but we can find it along through the summer.

Q. 227. You don't mean every day, do you?

A. No sir, but you can see it off and on. It comes sometimes for three or four days maybe.

Q. 228. Don't you know that it comes in on an average of once a month?

A. Yes sir, I should say that is a good average

205 Q. 229. Once every two weeks?

A. Yes sir, and more than that. Of course there are days and days there won't be any smoke, and then again we have it for three or four days.

Q. 230. When did that begin?

A. I can't tell you. It was in there back in May and it has been that way every year, ever since six or seven years ago.

Q. 231. You didn't see any of the effects of it in May?

A. Yes sir, I did; I saw it on my potatoes there at home.

Q. 232. Still the potatoes grew on?

A. No sir; they never growed off. I never made half what I ought.

Q. 233. Maybe you didn't work them?

A. I didn't but my folks did.

Q. 234. Isn't this a fact, that when the forests have been cut over, and you leave the dead laps of the trees in there, that disease arises in these laps and that is imparted, or rather the trees of the forest are infected by them?

A. I don't know that I can answer that. I can't answer that part about the disease. I know that sometimes when you cut pines worms get into them and then they get into the other pines; if that ain't what you mean by disease, I can't state.

Q. 235. Isn't the same thing true with reference to chestnut?

A. No sir, I don't think that it is.

Q. 236. That is only true as to the yellow pine?

A. Yes sir. The white pine, the worms don't effect that.

Q. 237. Don't you know that that is true with reference to all kinds of timber?

A. It has never shown up that way in our section except on the yellow pine.

Q. 238. You testified about the smoke hurting your apples, and as I understood you, you said they turned black?

A. Yes sir, they turn dark.

Q. 239. Do the- always turn dark?

A. Not always. Sometimes they speck and don't turn dark; it was only once or twice that I saw one or two of the orchards turn perfectly dark; the way it generally effects it, it generally specks it a dark brownish color, and they would hang that way on the
206 tree until after the time for them to mature.

Q. 240. Did they crack open?

—. Yes sir, some of them did.

Q. 241. Don't you know, as a matter of fact that when the apples crack open that way, that that is the fung-us disease?

A. No sir, I don't.

Q. 242. Don't you know that smoke don't have any such effect?

A. I know sir that I would see these trees and I would see the smoke in there and then be back there a week after that and these apples would be that way, and would drop off.

Q. 243. Then you think that smoke has that effect?

A. It did on those trees I saw in there. I counted a dozen in the Crenshaw Orchard.

Q. 244. Did you ever see it anywhere else?

A. I never saw it as bad as that anywhere else.

Q. 245. Did you ever see apples turn black?

A. No sir, I have seen them turn a dark brown.

Q. 246. You base your opinion solely on the fact that you had some apples and you saw some smoke in there, and afterwards you

saw the apples turn black, and you reached the conclusion that it was the smoke on the apples that caused them to turn black?

A. Yes sir.

Q. 247. You don't know it to be a fact that they turn black invariably from the fung-us disease?

A. I can't say about that.

Q. 248. You don't know whether that is smoke or they really have got the fung-us disease?

A. No sir.

Q. 249. You say that you smelled smoke from the Ducktown plant when out on some mountains?

A. I said that I smelled the smoke.

Q. 250. When was the last time that you smelled any smoke down in Gilmer County?

A. I declare I can't answer that; I don't remember the date when I smelled it.

Q. 251. When did you quit raising peas Mr. Sharp?

A. I haven't raised any peas to amount to anything in several years; I haven't quit trying yet.

Q. 252. Got any this year?

A. Yes sir.

207 Q. 253. When did you plant them?

A. Along back in May.

Q. 254. How are they getting along?

A. Very well. They are looking very well.

Q. 255. Haven't you seen in your travels stretches of country where they raise the finest kind of peas?

A. They used to raise them.

Q. 256. Don't you know that last year you saw some very fine crops of peas?

A. No sir.

Q. 257. Do you know where Mr. Willis Gillam lives, three miles this side of Ducktown?

A. No sir, I don't know that I do.

Q. 258. Don't you know that three miles this side of Copper Hill Mr. Gillam has a splendid crop of peas?

A. No sir; I haven't passed, and I don't know anything about it.

Q. 259. Have you been between Blue Ridge and Copper Hill this summer?

A. Yes sir—I am not sure, let me see. I have been on that road from Epworth to Copper Hill.

Q. 260. Do you remember seeing any crops effected between Blue Ridge and Copper Hill?

A. I don't rem*meb*-r seeing or passing many crops.

Q. 261. You kept an eye out for crops all the time?

A. I never paid any attention to the crops as I went through there. I don't think I passed very many farms on this road between here and Copper Hill, I mean between here and Epworth.

Redirect examination by Mr. DRAKE:

Q. 1. You have been asked about getting up evidence for the State in this case, I will ask you if you don't know it to be a fact that

I have met with at least three public meetings of the farmers of Gilmer County at Ellijay in the last two months discussing this situation with them?

A. Yes sir.

Q. 2. I will also ask you, if you don't know it to be a fact that Mr. Lamar Hill and I have been associated with the citizens of *of* Gilmer and Fannin Counties for the last six or seven years in re-

208 gard to this smoke situation?

A. Yes sir; I have understood that, and I have saw you there working at that.

Q. 3. Has the State paid you for your work that you have done in getting up this testimony?

A. No sir, and I don't know whether I will ever get anything for it.

Mileage of witness: 50 Miles.

J. P. VESTAL, sworn for the State to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. —. How old are you Mr. Vestal?

A. Fifty-nine; sixty if I live to see the first of next February.

Q. 2. Where do you live?

A. At Epworth at this time. I was born something less than a mile from the Tennessee Copper Company's plant.

Q. 3. Were you born in Fannin County?

A. Yes sir.

Q. 3. What county do you now live in?

A. Fannin.

Q. 4. How much land *to* you own in Fannin County, and whereabouts is it located.

A. We owns, me and my boy, about 15,000 acres in Fannin and Gilmer and a small per cent in Murray.

Q. 5. Your property, which way is it located from these plants?

A. South and a little bit West.

Q. 6. How near to the copper companies is the nearest part of your land?

A. About 2½ mles from the Tennessee Copper Company.

Q. 7. How far to the Ducktown plant?

A. Air course, I think that it is something like two miles further.

Q. 8. How far from where you now live at the present time to these plants?

A. That is where I now live.

Q. 9. The distances you have just given?

A. Yes sir.

Q. 10. Are you or not familiar with the timber that grows in that part of Fannin County?

209 A. Yes sir; I claim to be and I think that I am.

Q. 11. Are you acquainted with the crops that the farmers grow in that country?

A. Yes sir; I am not a farmer much myself at this time; although I am what you might term a one-horse farmer.

Q. 12. What has been your business; name it?

A. For the last twenty years and better I have been in the lumber business. For the last two years I haven't done anything, but for twenty years back of that I have been in the saw-mill business.

Q. 13. Are you or not familiar with the history of that Ducktown copper smelting industry?

A. I don't know so much about the smelting; but I am acquainted with the smoke that comes from there, and the fumes.

Q. 14. How long, do you know, have they been running?

A. The Ducktown plant has been running for twenty-two years or more.

Q. 15. You know when they commenced, do you?

A. Yes sir.

Q. 16. Do you remember when they went to making copper there at this other company's plant?

A. Yes sir.

Q. 17. Have you observed smoke or sulphur fumes arising from those plants?

A. Yes sir.

Q. 18. Please describe that smoke that arises and its conduct after it gets into the air?

A. Sometimes it rises up some distance, and then sometimes it don't go so high, and then it makes off whichever way the air is; it goes towards North Carolina sometimes, and sometimes towards Georgia, just whichever way the air carries it.

Q. 19. What is the appearance of that smoke?

A. Sometimes it will have a different appearance; sometimes it will be a light grey; and then sometimes it is blue, and then sometimes it has a yellow cast.

Q. 20. Does the atmosphere have anything to do with that?

A. The atmosphere? I don't understand.

Q. 21. I mean on the different colors?

A. I don't know about that. I know that it don't appear alike at all times. Sometimes it is very blue.

210 Q. 22. Do you know whether to attribute that to the weather or not?

A. I think that when the sun is shining bright it shows up lighter.

Q. 23. Then the condition of the atmosphere and the sun shine does effect the color of it?

A. Yes sir.

Q. 24. Have you ever seen that smoke over here in Georgia?

A. Yes sir.

Q. 25. When?

A. At different times.

Q. 26. Commence and tell in the last five or six years, the condition the smoke has been here in Georgia?

A. From 1905 to 1910 it was very bad and then for about two years it let up a little; then in 1913 it was bad that year; and this year it has been worse than it was last year.

Q. 27. Any way besides seeing that smoke that you could tell it?
A. Yes sir, you could smell it.
Q. 28. How does it smell?
A. It smells like sulphur smoke.
Q. 29. Have you ever been over to the plants?
A. Yes sir, I have been over near the plants.
Q. 30. Have you smelt the sulphur fumes there?
A. Yes sir.
Q. 31. As compared with those fumes, how was that smoke?
A. The same thing, so far as I can tell.
Q. *31.* The same character of smell?
A. Yes sir.
Q. 32. What is the effect of that smoke on the forest trees and foliage?
A. Well, when it comes over there, as soon as it leaves the leaves will wither like the fire has scalded it and in a few days they begin to turn brown and later they drop off. After a heavy attack of it the leaves will shed. That come in on the timber this year.
Q. 33. How long ago this summer have you observed the leaves falling off?
A. Last week, and three weeks ago. The leaves of the timber this summer are on the ground.
Q. 34. Have the leaves been on the trees green this year?
A. Yes sir.
Q. 35. Have you made any trips up through the Northern part of Fannin County this year to observe the smoke injury; if so, how did you make those trips?
211 A. I think I made three quite recently, within the last three weeks.
Q. —. The first trip, who was that with?
A. Col. Drake, yourself, was with me the first trip, and Mr. Spooner was with me the first trip.
Q. 37. Who else?
A. My son, John Vestal.
Q. 38. On that trip, where did we go?
A. We went out to Epworth to Madola, Georgia; we went out near Higdon's store, and then we turned a little Southwest and went out near Oasis Post Office on the old turn pike that time.
Q. 39. In regard to water courses, what water courses did we cross or traverse at that time?
A. We crossed what is called Patterson branch next to Fightin' Town, and then coming back we crossed some other branches and come back across by Adams.
Q. 40. When we struck that *turn* pike, what is that creek called?
A. That — Higdon Creek, over East.
Q. 41. How many miles did we go from Epworth to where we turned back?
A. I don't remember what the distance is/
Q. 42. About how far?
A. It must have been seven or eight miles.
Q. 43. How far were we from the copper companies' plants when

we started—how far from them were we at the furtherest point on that trip, and how far from them when we turned back?

A. When we started out we was I think about 2½ miles from the Tennessee Copper Company's plant, and about 4½ miles from the Ducktown plant, and when we turned back, we must have been, I would say, eight miles.

Q. 44. From where?

A. From the Tennessee Copper Company's plant, and further from the Ducktown plant.

Q. 45. Was that the furtherest point we were, there where we turned back?

A. I don't remember whether we were further away there at Higdon's store; yes, I think that was.

Q. 46. On that trip did you see any recent signs of sulphur injury on that timber?

212 A. Yes sir; lots of it.

Q. 47. To what extent was the timber that you saw effected?

A. I think that we saw places where there must have been one-fourth effected, and by smoke this year.

Q. 48. Was there evidence of previous damage?

A. Yes sir, there was.

Q. 49. In what years and times did that appear to have been damaged?

A. It has run all the way back for one, two or three years, and on back maybe as long as five years. It won't stand long after is it killed by this smoke; it soon drops. The timber won't stand long.

Q. 50. What kind of timber, generally, appeared to be effected the worst, that we saw, Mr. Vestal?

A. I think that we saw more oak timber than any other kind; what we call Spanish Oak, Black Jack and Post Oak, and some White Oak, and we saw some hickory, small hickory. Most of the hickory has been killed heretofore, though.

Q. 51. I will ask you whether or not we made search for hickory and how often we come on it that day in that country?

A. Yes sir, we looked for hickory and it was very scarce.

Q. 52. How did the hickory use to be in that country?

A. There used to be much more than now; a large per cent more than now.

Q. 53. With repsect to dead trees that had died in previous years, how was that in that forest?

A. There was a lot of dead timber.

Q. 54. What did it appear to have died from?

A. I think that the biggest per cent died from smoke. May have some died from other causes.

Q. 55. How does the smoke effect that timber in killing it?

A. It first comes over and bites the leaves; crisps them and turns them brown, and then the tops begin to die, and it grows worse; it will first kill the top; maybe some sprouts and some of the bottom leaves, and graudually it goes on down until finally it kills the tree.

Q. 56. Until how many years back does it take to kill the tree?

A. That depends on how great the smoke is; if it becomes
213 great it may kill it in one year, and then again it would live probably four or five years; it depends on how strong the smoke is.

Q. 57. Does the time of the year that it strikes it have anything to do with the injury?

A. I think that it does; when the sap is in the tree the worms will get into it, and it will go faster.

Q. 58. Suppose that it strikes it in the fall, would it have the same effect as if it struck it in June?

A. I think not. When the sap is heavy I think the effect is worse.

Q. 59. How much land, forest land, in acres, do you suppose onn that trip, we passed through?

A. I didn't make any note of it; I don't know.

Q. 60. Estimate it please, in hundreds of acres?

A. It would be a rough estimate shure enough; we went that distance, and we would cross two lots in a mile.

Q. 61. Also estimate it in miles, how much territory did we inspect?

A. We must have went while I was with you,—we went out eight miles and back.

Q. 62. How far on either side of the roads could we see when we didn't stop, out into the woods?

A. We could probably see a mile or more. In some places you couldn't see no distance; and then again you could see five miles. You can't make a close inspection that far, of course.

Q. 63. Could you see smoke injury and easily detect it through that section of the country?

A. Very easy. A man can't help but see it if he will keep his eyes open.

Q. 64. The next trip that you made since then, who was with you?

A. It was made a few days later with Mr. Frank Shippen; my son John, J. H. Vestal, and I can't call the other man's name at this time.

Q. 65. Where does he live?

A. He lives in Atlanta—Mr. Adams.

Q. 66. Is he a photographer?

A. Yes sir.

Q. 67. Where did you start from with Mr. Adams, Mr. Frank Shippen and your son?

A. There was another man with us; Mr. Frank Shippen, John, myself, Mr. Adams,—I will give you the other man's name in a minute—Mr. Sharpe.

214 Q. 68. Where did you go with them, where did you start?

A. We left Blue Ridge together.

Q. 69. Where did you go with them?

A. We went to Epworth.

Q. 70. Where did you go from there?

A. We went out by Madola Post Office, out near Higdon's store, we went further out that way than we and you went in that direc-

tion, and turned back and went to Oasis, and we went further that way to where Mr. Barnes lived, and went on up on Blue Ridge mountain, called the Barnes mountain.

Q. 71. How much time did you spend up on the mountain?

A. We stayed up on the mountain some little bit.

Q. 72. What was the character of the smoke injury that you saw up on the mountain?

A. The smoke injury was very great.

Q. 73. What per cent of it was burned by smoke?

A. I don't know what per cent, but there was a big per cent; I suppose that one-fourth of the timber that had green leaves in the spring, was brown.

Q. 74. Where did you go after you got off of the mountain?

A. We come back to Mr. Barnes and stayed all night, and next day we went across the Blue Ridge over on Jack's river to Mr. Harkinses.

Q. 75. What point did you go to from there?

A. We went down the river to Bear Branch, and then we come on back across the mountain to Mr. Barnes again, and then we—I have made so many trips I may get them tangled up on them.

Q. 76. As best you remember?

A. I'll get it right; I will take my time. We then went back down to Madola, down to Pearceville, and then we went Northwest to Frog Mountain, and then on Granny Marr mountain. We went up on the mountain where we could see both of these plants. It was burned off over them mountains.

Q. 77. What was that burn caused by?

A. Smoke.

Q. 78. Could you see the Tennessee Copper Company stack from there?

A. Yes, sir.

Q. 79. See the Ducktown Copper Company smoke from there?

A. Yes, sir.

215 Q. 80. You observed it and looked at it?

A. Yes, sir.

Q. 81. Which way was the swind blowing that day, if you remember?

A. I believe it was going kinder Northwest, or kinder west direction; I have been up there so many times, I don't remember. I know the next time I was up there later on I could see the stack; the Ducktown stack.

Q. 82. The first day, could you see the stack?

A. No, sir, the smoke was too thick; I don't think I saw the stack the first day. I could see the water tank that trip.

Q. 83. Did you wind up the trip with Mr. Sharp that day?

A. No, sir, we went on back by Pelf's place, is my recollection, down as far as Burnt Store and Church House.

Q. 84. Where did you go from there?

A. We went on back around by Epworth and Copperhill.

Q. 85. Have you made any trips since then?

A. Yes, sir.

Q. 86. Who was with you?

A. I made the next trip with Mr. Clark, Mr. Johnson, myself, John J. Vestal again, and Dr. Hedgecock, I believe is his name.

Q. 87. Then you took the same route that Dr. Hedgecock took on that trip?

A. Yes, sir, I was with them that day until late in the evening when they came on to Blue Ridge, I went on home.

Q. 88. They had to go by your home?

A. No, sir, we went by Copperhill.

Q. 89. On all of these trips, these three trips you have described, state as nearly as you can how much territory you covered, in miles as nearly as you can?

A. We was out several miles; that is to say where we run out to, and where we left the road and went up on the mountains.

Q. 90. You will please estimate the number of miles that you walked and rode?

A. It would be hard to do that on these different trips. On that second trip we went to Tumblin' Creek and down Tumblin' Creek, on down to Number nine; that is we went to the Tennessee line, and then turned back through 27, 11 and 12, I think; that is on the second trip.

216 Q. 91. Did you notice any smoke injury over on Tumblin' Creek?

A. Yes, sir, there was smoke injury over there.

Q. 92. Where was the worst effected section of the country that you went through?

A. I think it was worse back on these other mountains than it was on Tumblin' Creek; it was bad down Tumblin' Creek.

Q. 95. You say other mountains, what mountains do you mean?

A. Known as the Blue Ridge mountain, Barnes Mountain and Granny Marr mountain; all that section down by Epworth.

Q. 94. Cow Pen Mountain, do you know where that is?

A. Yes, sir.

Q. 95. Was you up there?

A. No, sir.

Q. 96. Which way from there?

A. At Harkinses, we was East.

Q. 97. Do you know what is called on the map here Three Fork Mountains?

A. I reckon what is called the Three Forks is South of Cowpen: I think that is what is called the Three Frogs.

Q. 98. Now here, look at this map?

A. I can't tell but very little about the map.

Q. 99. Suppose that you were standing up next to the Tennessee line, like from say this point (indicating), here on Cowpen mountain, the three Frogs are down here this way?

A. I am not acquainted in there.

Q. 100. But it would be South of it?

A. I think it would be South from Cowpen.

Q. 101. Take Higdon's store, I will show you right here (indicating), now was that point furtherest from Higdon's store?

A. Yes, sir.
Q. 102. How far west?
A. I don't know the distance.
Q. 103. Didn't you have to stop the automobile at Mr. Barnes?
A. Yes, sir.
Q. 104. And from there you walked up on that mountain?
A. Yes, sir.
Q. 105. Is that what is called the Blue Ridge mountain, the Three Forks of the Blue Ridge Mountains?
A. No, sir, the Three Forks is west of there.
Q. 104. How far from Higdon's store and southwest did you go; estimate it in miles?
A. On either one of the trips?
Q. 105. Yes?
A. Harkins lives on 20, 21 and 22 in the 9th and second—
217 Q. 106. They are not on this map?
A. I don't know the distance.
Q. 107. You went over on Jacks River?
A. We did on one trip.
Q. 108. You can't estimate in miles how much territory you covered?
A. It would be kind of guess work.
Q. 109. Please give us a guess as to how far you went?
A. From Higdon's store?
Q. 110. Yes?
A. Four or five miles air course; it was a good deal more than that by road.
Q. 111. I mean by road, how far did you go?
A. Several miles; let me see,——
Q. 112. I want to know how much territory you went over?
A. I guess we went nine or ten miles the way we went.
Q. 113. Did you observe any smoke damage, where you crossed over the mountains?
A. Where we crossed the Blue Ridge, we did.
Q. 114. What Gap was it that you went through on the Blue Ridge?
A. Barnes' Gap.
Q. 115. Do you know where the Sowers gap is?
A. Yes, sir.
Q. 116. How near did you go to that?
A. Three or four miles.
Q. 117. Which way?
A. West and Northwest.
Q. 117. You went through the mountains three miles Northwest of Sowers gap?
A. Yes, sir. Near Harkinses; they live in that direction.
Q. 118. Grassy Mountain, was that made on that trip?
A. No, sir.
Q. 119. Big Bald or Little Bald?
A. No, sir.
Q. 120. Which way did you pass over these mountains?

A. Well I was rather East and North of what is called Grassy Mountain and Bald; almost East due East at Harkinses.

Q. 121. Jacks River East of these mountains or West?

A. Jacks River, the head of the Stream is rather East. I am not sure, as I am not so well acquainted with Grassy Mountain in there.

Q. 122. All of your work was then South and East of these mountains in this section, back in this section?

A. Yes, sir, you might say East and North East these last three trips I spoke of.

Q. 123. Have you observed any smoke injury in Fannin County this year, before these trips?

A. Yes, sir.

218 Q. 124. When?

A. All along all through all the years, ever since vegetation put out. Ever since May all along up until about the first of June, about the 8th and 9th of June; it was very bad through May, and a little since then.

Q. 125. Did you see any evidences of it on the timber in May?

A. Yes, sir; some little discoloration through May.

Q. 126. Did you observe any of it on any garden truck in May?

A. I can't say that I did in May. The 8th and 9th of June it was very bad.

Q. 127. Since that time has it or not been very bad?

A. Yes, sir, along at different times.

Q. 128. How many times, do you know?

A. Well, it bit some of our stuff here on the 3rd of July.

Q. 129. This year?

A. Yes, sir; I had some new potatoes, and on the 3rd of July it bid them.

Q. 130. What other days did it effect your stuff,—did you see and smell it on the 3rd of July?

A. Yes, sir, I saw it and smelled it.

Q. 131. Any other days you see it in July?

A. I have seen it all along.

Q. 132. In August, have you seen it this month?

A. Yes, sir; every few days it comes over there.

Q. 133. The trip that you spoke of making with myself and Mr. Spooner, please describe the condition as to smoke as we went along to Higdon's store, and also as we came back, what did we see?

A. I have been — so many trips, I don't know what I could tell you. I saw smoke damage on every trip, and besides you can see it coming from the plants all through the country. I saw it from both plants every trip I made.

Q. 134. The trip that I was on, Mr. Vestal, do you remember whether we saw any smoke as we went along?

A. Yes, sir, I think we did.

Q. 135. I mean right down in the timber, did we smell any?

A. As I say, I have seen it so often, I don't remember what we saw. You remember me and you saw both plants. No, that is a

different time; it was the other trips I was on that we saw the
219 plants; I am mistaken about seeing the plants.

Q. 136. You don't recall seeing the smoke boiling through the timber in any of these hollows as we come back on that trip?

A. I don't quite at this time remember that.

Q. 137. You don't recall it, if such was a fact?

A. No, sir.

Q. 138. Last year, was there any damage done in that country?

A. Plenty of it.

Q. 139. What was the day or the months, if you can locate them?

A. I didn't try to keep any dates. I did keep some dates. I know that the Tennessee Copper Company was said to be shut down when I came back from Chattanooga, and there was damage the very next day. I come back on the 11th, and there was damage the very next day.

General FOWLER: Counsel for defendant objects to the statement by witness that the Tennessee Copper Company was "said to be shut down," because witness doesn't state that he knew it was shut down. Objection overruled. Appeal prayed and granted.

A. I was there and saw no smoke coming out of their stacks, and I was also there on the evening of the 12th and I didn't see any smoke coming out of their stacks again.

Q. 140. How close were you to Copper Hill and the Tennessee Copper Company's stack?

A. I was in half a mile, over across the bridge there that went into town.

Q. 141. And there wasn't no smoke coming out of the Tennessee Copper Company's stack at that time?

A. No, sir, I noticed it because they were said to be shut down.

Q. 142. On the 11th and 12th did you see smoke out at Epworth?

A. I did on the 12th. It bit my garden peas and corn.

Q. 143. Could you smell it?

A. Yes, sir.

Q. 144. That was last year?

A. Yes, sir.

Q. 145. What month — that in?

A. May.

220 Q. 146. The 12th day of May, 1913.

A. Yes, sir, and right on for a few days after that it continued right on.

Q. 147. The smoke was in there?

A. Yes, sir.

Q. 148. Was there any other times last year in July and June that it was over in that section?

A. Yes, sir, all along up until the latter part of the season. I don't remember the dates. I didn't put down none of them dates, but parties did that was with me.

Q. 149. You have been having a law suit with the Ducktown Copper Company, in Tennessee?

A. Yes, sir.

Q. 150. In what court?

A. All the suit I ever had was tried in the Federal Court at Chattanooga.

Q. 151. Was that the occasion on which you had been to Chattanooga?

A. Yes, sir. I came back home on the 11th day of May, 1913.

Q. 152. What other dates, later on, did you see the smoke over there?

A. I don't think I kept any dates, but I don't think that any month passed that we didn't have smoke and plenty of it but what damaged the young green leaves on the trees.

Q. 153. Mr. Vestal, how were the forests there on these mountains facing towards Ducktown, within the radius you have just described as having passed through, beginning at the Tennessee line and extending back say from five to ten miles in Georgia, what is the condition of the forests?

A. There is lots of damage. I think that 50% of it is bad in different places; I wouldn't say that all of it is bad, but acres and acres of it there is 50% bad.

Q. 154. As to the injury there, is it slight or is it serious near that section?

A. It's bad.

Q. 155. When you stated that there was a let up in this smoke in certain years, what years would you say that was?

A. From 1910, there seemed to be a let up until 1913; it was not so bad those years.

Q. 156. In 1910, 1911 and 1912 it wasn t so bad in this section?

A. No, sir.

Q. 157. As to the other years beginning back, when did you say it was bad?

221 A. In 1913 it got considerably worse, and this year it is a good deal worse than it was last year.

Q. 158. Prior to 1910, was it bad in that section and if so, what year or years?

A. From 1905 to 1910 there was very great damage to us and then it let up then until 1913; it wasn't so bad; we had smoke damage all along but it wasn't so serious as back of that and since that.

Q. 159. Do you know the effect of smoke on growing vegetation?

A. Yes, sir, I claim to know.

Q. 159. Describe that, please?

A. You mean on the forests? As I stated while ago it turns them brown when it hits it; they crisp up and turn brown and then they fall of-, I mean the leaves.

Q. 160. I believe you described that before?

A. Yes, sir.

Q. 161. Does it have a similar effect on garden truck?

A. Yes, sir, it looks like frost bite. The tomato and potato vines look like they was frost bit, or had fire around them.

Q. 162. What farm products are more resistant than the others if there is any such; I mean by that what does it effect the least?

A. I think that it effects corn the least of anything; sorghum cane too; I think they can stand it better than anything else.

Q. 163. What does it affect the worse; if you know?

A. It is very heavy on Irish potatoes; tomatoes, beans, peas and oats, and then it does serious damage to the orchards, but I don't know so much about the orchards as I do the other things.

Q. 164. Have you observed its effect on wheat and oats for the last few years?

A. I haven't see'd any oats; we can't raise oats.

Q. 165. Since when haven't you been able to raise any oats?

A. I discovered injury to oats eighteen years ago; it has been hurting the oats ever since that time, as far back as eighteen years ago.

Q. 166. State whether or not there was any difference after they built the tall stacks?

A. There was damage before the- built the tall stacks, all over in the Tumblin' Creek Country.

222 Q. 167. Do you know what effect the building of these high stacks had?

A. I don't know so much about the high stacks; I know when they quit roasting ore on the ground in what the- called road fires and went to smelting the green ore, it was very much worse all along.

Q. 168. After they changed the process it got worse?

A. Yes, sir. I didn't hurt so much when they used the roast process.

Q. 169. But as I understand you it did some damage?

A. Yes, sir, as far back as eighteen years ago it hurt us some, that is, in Georgia.

Cross-examination.

By GENERAL FOWLER:

Q. 1. You had a law suit against the Ducktown Company?

A. Yes, sir.

Q. 2. Do you remember in what year you brought suit?

A. I think I brought suit in 1908; no, not that suit; I brought that suit in 1910, the suit that was tried.

Q. 3. You brought suit before that?

A. Yes, sir.

Q. 4. In what court was that suit brought?

A. The first suit was brought in the county courts, I reckon, and was supposed to be tried at Ducktown.

Q. 5. The law court at Ducktown?

A. Yes, sir.

Q. 6. That suit was brought in 1908?

A. Yes, sir.

Q. 7. Then you brought another for trial in the Federal Court at Chattanooga?

A. They carried it to the Federal Court, and it was tried at Chattanooga.

Q. 8. When was that tried?
A. We had a trial, or a mistrial of it in May.
Q. 9. What year, 1913?
A. Yes, sir.
Q. 10. What became of it?
A. Eventually I lost it. It was tried again and they beat me.

Mr. DRAKE: We except to the questions and answers regarding this suit as being irrevelant in this litigation.
Exception overruled. Appeal prayed and granted.

Q. 11. That was tried before a jury?
A. Yes, sir.
Q. 12. That was submitted to a jury?
A. Yes, sir.
223 Q. 13. They returned a verdict against you?
A. Yes, sir.

Mr. DRAKE: And on the further ground that if relevant at all, the record of the court would be the best evidence. Exception overruled. Appeal prayed and granted.

Q. 14. You have stated here that you made several trips, on one of them you took along Dr. Hedgecock, the Government Expert?
A. Yes, sir.
Q. 15. He was an expert to examine that territory?
A. Yes, sir, I suppose he was in there for that.
Q. 16. You piloted that crowd?
A. I was there, yes sir.
Q. 17. Didn't you go by a number of gardens and fields where good crops were growing?
A. I went by some gardens, but we didn't pay any attention to the gardens.
Q. 18. Why didn't you?
A. I am not interested in the gardens. I am interested in the timber question. We looked at some garden stuff at home, is all.
Q. 19. Don't you know that these fumes will injure the garden stuff quicker than anything else?
A. I think that it will injure the timber about as quick as anything.
Q. 20. Don't you know that tomato plants and potatoes suffer more quickly than any kind of timber?
A. I don't know that it will get the plant first. I think that it will show up on the timber as quick as on anything.
Q. 21. Any way you didn't stop to look at a single garden or a single field of corn as you went along?
A. Let me see whether we did or didn't. There at Epworth we did look at a little of my stuff. I have made so many trips, it's hard for me to remember. I believe we did look at some flowers there at Mr. Barnes.
Q. 22. What kind?
A. Just ordinary flowers, and they showed up with smoke I think.

Q. 23. You don't know, you are just guessing, ain't you?
A. No, sir, I have been acquainted with it all these years, and I think that I know smoke damage.
Q. 24. You think that you can't be mistaken?
A. I wouldn't say that I couldn't be.
224 Q. 25. Didn't you gather quite a lot of specimens?
A. Yes, sir, we got a good many.
Q. 26. And showed them to Dr. Hedgecock?
A. Yes, sir.
Q. 27. Now, Mr. Vestal, don't you know it to be a fact that there are fine fields of corn growing right around near the Ducktown plant?
A. There are some fields of corn growing there.
Q. 28. That corn in good condition?
A. Well, sir, it has been damaged.
Q. 29. Did you investigate it?
A. Yes, sir.
Q. 30. Where?
A. Right there at my home place.
Q. 31. Don't you know that there is a fine field of corn right across the river from the Ducktown property?
A. I saw a field of corn there, yes, sir.
Q. 32. Didn't that look like splendid corn?
A. It looks like it is in very good growing condition; I haven't been close enough to see any damage on it.
Q. 33. Your corn was over at Epworth?
Q. Yes, sir, and Mr. Angel said that it was damaged by smoke.
Q. 34. Don't you know that it is improper to give hearsay testimony?
A. I don't know; that's what he said.
Q. Don't you know that it was illegal for you to inject that in here?
A. No, sir.

Mr. DRAKE: We except to the question and answer because I believe it is competent; the party in question being the agent and representative of the Tennessee Company.

Q. 34. I didn't ask you to tell anything Mr. Angel said?
A. No, sir.
Q. 35. Now, Mr. Vestal, don't you know that there are gardens right around Ducktown, and within a few hundred yards of the Ducktown plant that are in good condition?
A. I know that those I saw around Copperhill are damaged; I have two daughters living there.
Q. 36. They are South of Copperhill?
A. Yes, sir.
225 Q. 37. And three or four miles from Ducktown?
A. Half a mile, one of them.
Q. 38. I am talking about Isabella?
A. Probably near three miles from the Isabella plant.
Q. 39. And within half a mile of the Copperhill plant?

A. Yes, sir, one of them; the other one is possibly a mile.
Q. 40. On your trips here you speak of you- have- been out West of Epworth?
A. I have been to the Blue Ridge; I haven't been up further than the Blue Ridge in some time.
Q. 42. Have you been East of the Blue Ridge?
A. I don't know that I have been East of the Blue Ridge up in *in* ten years.
Q. 43. All of your investigations have been out in the direction of Madola, Pierceville, Higdon's store and around in there?
A. I have been from here to Atlanta on the South and to Knoxville on the North.
Q. 44. Did you find any smoke damage in Atlanta?
A. No, sir.
Q. 45. Was you down there hunting smoke damage?
A. No, sir.
Q. 46. You went over that ground with Dr. Hedgecock?
A. I was with him, yes sir.
Q. 47. Going back to Isabella, didn't you see some fine gardens right there in Isabella?
A. I saw some gardens in there, and I saw some damage too.
Q. 48. Tell one single garden where you saw any damage?
A. Some there at Mrs. Weeks'.
Q. 49. What was it that was damaged?
A. As far as I can call to mind it was collards and other things.
Q. 50. Do you know that was smoke damage?
A. I am satisfied that it was.
Q. 51. You are not a botanist?
A. No, sir.
Q. 52. You say your orchards were damaged?
A. Yes sir; they was damaged all right.
Q. 53. How were they damaged?
A. Dead limbs, discolored leaves.
Q. 54. Do you know anything about the San *Hosae* scale?
A. No, sir.
226 Q. 55. You can just see smoke damage on any kind of a plant or tree?
A. I can't see it unless it is there.
Q. 56. Can't you imagine that you see it whether it is there or not?
A. No, sir.
Q. 57. Don't you, as a matter of fact, imagine that you see it all the time?
A. No, sir.
Q. 58. How many acres of forest land have you got on which you claim there has been damage?
A. We have got something like 15,000 acres; most of it has been damaged, but I wouldn't say that every lot has been damaged.
Q. 59. What interest have you in this 15,000 acres?
A. Something like 12,000 acres of it is my own, and me and my son own the others.

Q. 60. It is for the supposed damage to this forest that you have been suing the Ducktown Company?

A. Yes, sir. I have been suing them for damages to my land.

Q. 61. Isn't it true that you can travel for many miles here in Fannin County and see no evidences whatever of smoke damage?

A. There may be some sections. I don't see any. It don't get all over the country at one time; it has different channels through which it travels.

Q. 62. Where are any sections that you don't see any evidence of smoke damage?

A. I don't see much here in Blue Ridge. I have seen brown leaves there by Mr. Engel's.

Q. 63. Do you know what browned them?

A. I didn't get off to examine them closely, but I think that it's smoke.

Q. 64. Isn't it a fact Mr. Vestal that every time you see a brown leaf you suppose that smoke browned it?

A. No, sir.

Q. 65. Do you know of any other disease that browns the leaves?

A. I wouldn't say. A fire might turn it brown, or worms.

Q. 66. Do you know or are you familiar with any other disease of timber, except the trouble arising from these fumes?

A. I am not an expert, but I know when I see smoke
227 damage.

Q. 67. Can you tell the difference between a chestnut tree dying from the fung-us disease and smoke injury?

A. I think I can.

Q. 68. Did you ever see a chestnut tree die of the fung-us disease?

A. I have see'd trees die from other causes besides smoke.

Q. 69. Did you ever see a tree that died from the fung-us disease?

A. I don't know what the fung-us disease is.

Q. 70. You don't know what it is, yet you swear that you can tell the difference between a tree dying from the fung-us disease, and one dying from smoke?

A. I see trees traveling about frequently that has died from something else. I know how the appearance from some is and I can tell when they die from something else.

Q. 71. Tell me about these other stretches of country where you see substantially no evidence of smoke disease?

A. In Fannin County?

Q. 72. You have mentioned Blue Ridge?

A. I haven't been over back in Fannin County; back East for some time; not this year; I haven't been any further South down here than the county line.

Q. 73. So anyway the smoke affects Fannin County. Now then in the same locality or spot which may be a few acres or may be a few miles, the smoke comes in from time to time and scorches the leaves?

A. It does; it comes in and scorches the leaves, if it is serious.

Q. 74. And if that is repeated through a few years, you think that will kill the tree?

A. Yes, sir, it will eventually kill it.

Q. 75. What tree have you ever seen die with one application of smoke?

A. I can't say any certain particular tree. I have noticed the forests and have been in the woods for twenty years of my life.

Q. 76. Don't you know that the forests of North Georgia are badly effected from other causes than smoke?

A. I think that some of them died from other causes.

Q. 77. Don't you know that a great many trees have been killed by forest fires?

A. We have very few forest fires in North Georgia.

228 Q. 78. Don't you know that you have wood fires here every year?

A. More or less, that's right.

Q. 79. Don't these wood fires practically kill all of the underbrush?

A. If it is very dry and there are plenty of leaves, it will kill the underbrush.

Q. 80. Kills the growth for the season?

A. What is on the ground that is dry, it kills.

Q. 81. Isn't that the cause of the death of the underbrush?

A. If it comes in it will kill it.

Q. 82. Now, as a matter of fact, you never knew of the smoke killing the underbrush, did you?

A. Yes, I have seen it frequently.

Q. 83. You have gone along and have seen a little shrubbery and some little twigs browned, and you thought it was browned by smoke?

A. I know that it has.

Q. 84. How do you know it?

A. By noticing it.

Q. 85. But it may have died from other causes?

A. I could tell if it had died from other causes.

Q. What other causes could you tell?

A. Fire; if fire had been there I could tell and could see.

Q. 87. Suppose that it had died from want of circulation as was said by Dr. Hedgecock, could you tell that?

A. You mean drouth?

Q. 88. Well, for want of circulation?

A. We didn't have any drouths; haven't had any long enough to kill a tree.

Q. 89. As a matter of fact a tree that is killed by the drouth has exactly the same appearance as when killed by the fumes don't it?

A. As a rule a tree killed by smoke dies in the top. I think in the drouth it sheds the leaves.

Q. 90. Don't you know that when a tree dies from the drouth that it begins to die in the top, because that is furtherest from the root that feeds it?

A. I don't think we have any trees that died from drouth.
229 Q. 91. Did you ever see a tree die from the drouth?
A. I don't know that I have; I don't remember specially.
Q. 92. Maybe you have seen a great many trees die from drouth, and maybe you thought they died from smoke?
A. No sir, I don't think I did.
Q. 93. How do you know whether you know the difference?
A. I know that when the smoke comes along and kills the leaves you can tell it.
Q. 94. Anyway, coming back to the vegetation that grows close to the earth and holds the soil together, a great deal of that is killed by the forest or wood fires?
A. The wood fires kill the underbrush, of course.
Q. 95. You never have seen much of that killed by this smoke?
A. Yes sir, a right smart of it.
Q. 96. How much did you ever see of it?
A. A good deal of it.
Q. 97. Did you ever see a half acre?
A. Yes sir, I have seen more than ten acres where it was killed.
Q. 98. Where did you ever see ten acres of it that was killed by smoke?
A. I have seen it in many different places; very few trees are killed by forest fire.
Q. 99. I am not talking about the fires killing the trees, I am talking about the smoke killing the underbrush?
A. I have seen more than ten acres killed by the smoke.
Q. 100. Where did you ever see ten acres killed?
A. On Barnes mountain, I think I have seen 25 acres more or less that was killed.
Q. 101. This year?
A. Yes sir, the underbrush.
Q. 102. You can't tell to save your life whether that has been killed until next year, can you?
A. I know that the young leaves are brown now all around.
Q. 103. But you don't know whether it has been killed or not?
A. Not altogether, but it is injured.
Q. 104. Do you know Mr. Oliver?
A. Yes sir.
Q. 105. Go by his place?
A. Yes sir.
Q. 106. Ever examine his orchard?
A. No sir.
230 Q. 107. Why didn't you?
A. We didn't have any orders to go in there.
Q. 108. See any damage on his place?
A. I did East of his place.
Q. 109. How far from his place?
A. I think a quarter of a mile.
Q. 110. Where does he live?
A. I think it's on 21 and 22.
Q. 112. How far is that from Epworth?

A. Let me see; ninth and second; eighth and second. Epworth is I expect four or five miles; that's a guess.

Q. 113. Your land has been cut over once or twice for lumber hasn't it?

A. Part of it has.

Q. 114. How much of it?

A. I expect, at a guess, I would say that 50% has been cut for the poplar and the white pine.

Q. 115. Necessarily cutting those trees would injure the remaining trees?

A. To some extent it would.

Q. 116. You left the laps in the woods?

A. Yes sir.

Q. 117. When the fire gets into those laps it makes it that much more destructive?

A. I would think so, yes sir.

Q. 118. Don't you know that leaving this dead wood in the forests will breed disease which will infect the other timber in that locality?

A. I think it would if it was cut in the summer. It is very likely that worms would get into that, and from that into the other timber.

Q. 119. Haven't you know- of forests to be almost destroyed that way?

A. I haven't here in the mountains. I don't know of but two places to speak of that have been damaged by forest fires right at this time. I can't recall but two.

Q. 120. Haven't you known of hickory to die of some other disease than smoke?

A. I have seen hickory die from other causes.

Q. 121. Don't you know for a fact that the worms get into the hickories, and haven't you got hickories cut almost to a pulp by the worms?

A. We never cut much hickory: very little hickory timber. We cut the white pine and the poplar, and some chestnut; we tried to cut the best part of the white pine, the poplar and the chestnut.

Q. 122. At these particular spots and places where you
231 saw so much dead timber, there has been forest fires in there every year, hasn't there?

A. Possibly wood fires; that didn't kill the timber. I know enough to know that it didn't kill any percent of the timber.

Q. 123. Don't you know that the forests through there have been cut over?

A. Part of them. I have seen places where 50% of the timber would be dead plum out of the way of a saw-mill.

Q. 124. What kinds?

A. White Pine, Oak, Chestnut, Hemlock.

Q. 125. Don't you know that the white pine and chestnut is dying all through these mountains here in the south?

A. I don't.

Q. 126. Don't you know it from your reading and from your knowledge?

A. I am so unfortunate as not to be able to read.

Q. 127. From your experience as a lumberman don't you know it to be a fact that the Hemlock, white pine and the chestnut are dying all over these Southern mountains?

A. Well, I can't say that they are.

Q. 128. Haven't you heard that in your business?

A. I have heard that the chestnut is dying.

Q. 129. Haven't you heard that the Hemlock is dying also?

A. I don't recall that I have heard that the Hemlock is dying in other sections.

Q. 130. Haven't you traveled over sections of the South?

A. Very little. I haven't been no further than Atlanta in some years.

Q. 131. In your travels to Atlanta, haven't you seen a good deal of dead timber?

A. There ain't a great sight of timber along the road; there is some dead timber anywhere I go; a small percent. While I was on the way to and from Chattanooga I noticed all along, and I don't think that over one per cent of the timber is dead.

Q. 132. That is in the Tennessee valley there?

A. Yes sir.

Q. 133. Ridges on either side?

A. Yes sir; I looked at good timber on one side.

Q. 134. In regard to your crops, you haven't been trying to raise any oats for a number of years?

A. No sir, I haven't myself.

Q. 135. Years ago you did raise them?

A. Yes sir.

232 Q. 136. What kind did you raise, Spring oats?

A. Yes sir.

Q. 137. Did you ever try to raise any winter oats?

A. I haven't any knowledge of sowing any winter oats but one time.

Q. 138. Don't you know it to be a fact that through quite a large section of the South the Spring oat has played out, and that they are now sowing the winter oat altogether?

A. I haven't paid enough attention to farming for the last twenty years to know what they are doing.

Q. 139. I believe that you say that potatoes are one of the most delicate things in your gardens?

A. Yes sir, about as delicate as most anything in our gardens.

Q. 140. Tomatoes are also delicate?

A. This year the tomatoes have stood it better than they usually do.

Q. 141. What about peas?

A. It's bad on peas.

Q. 142. Do you Mr. Gillam?

A. Yes sir.

Q. 143. Have you seen his crop of peas this year?

A. I have passed along the road by them, but I never paid any attention to them.

Q. 144. How far is that from Ducktown?

A. You mean the Ducktown plant?

Q. 145. Yes?

A. It's six or seven miles.

Q. 146. And three or four miles from the Tennessee Copper Co.?

A. I don't know the distance; I am a poor hand to guess distances.

Q. 147. You took Dr. Hedgecock through there?

A. Yes sir.

Q. 148. You didn't point out these things to him?

A. No, I didn't stop to look at any crops.

Q. 149. As a matter of fact you wasn't looking for good fields of peas and corn, and good gardens, and forests that the smoke didn't effect, but you were after points you thought were effected?

A. I looked at everything I seed, and where we saw any place that looked like it had been effected by smoke, we looked at that.

Q. 150. You were looking for smoke injury, wasn't you?

A. We was looking to see the condition of the country, whether it was damaged, or not damaged.

233 Q. 151. You say that it was from 1905 up to 1910?

A. Yes sir, they was about the years we had it bad.

Q. 152. Didn't you mean that it was about the beginning of the year 1906, the Spring of 1906?

A. That would include 1905; from 1905 to 1910.

Q. 153. That is from 1905?

A. Yes sir, up to 1910.

Q. 154. As a matter of fact, didn't it begin to do injury when that high stack was built?

A. It begun to do injury on our land as far back as eighteen years ago.

Q. 155. You paid no attention to it did you?

A. Yes sir, a man could look at it and tell it. I saw it myself.

Q. 156. What did you see?

A. I saw white pines turning brown and shedding their leaves.

Q. 157. When did you see that?

A. That commenced way back yonder, when I first went back in there.

Q. 158. You had a lots of white pine when that high stack was built?

A. Yes sir, more than we have now.

Q. *157*. You had quite a quantity?

A. Yes sir.

Q. *158*. Didn't the real damage that you are complaining of begin when that high stack was built?

A. It was damaged all along from eighteen years ago up to 1905, and from 1905 to 1910 it was worse.

Q. 159. Answer my question, the real damage that you are complaining about began when that high stack was built, didn't it?

A. I don't remember what year the high stack went up. I saw damage before that.

Q. 160. The first year that you noticed any material damage was during the season of 1906, isn't that true?

A. I think it would go back to 1905; it was very bad in 1905.

Q. 161. What makes you remember that?

A. I moved to Epworth in 1905.

Q. 162. Where did you go there from?

A. Madola.

Q. 163. You hadn't noticed it at all at Madola?

A. Yes sir.

Q. 164. This damage that you mention, that was to the white pine?

234 A. Yes sir.

Q. 165. 1910 was as bad as you saw?

A. No, it wasn't bad in 1910; it was bad up to 1910. 1909 was a bad year.

Q. 166. How about 1911?

A. It wasn't so bad that year.

Q. 167. Was there any damage at all?

A. Yes sir, there has been damage every year.

Q. 168. What was damaged?

A. Timber of all kinds, except poplar. I can't see that the poplar was damaged but very little.

Q. 169. How was 1912?

A. About like 1911.

Q. 170. I believe that you said that 1913 was some worse?

A. It was a good deal worse.

Q. 171. What day did you notice it especially in 1913?

A. The 12th day of May.

Q. 172. That the day after you lost the law suit?

A. That was the day after I got home.

Q. 173. You say at that time you had lost your law suit?

A. No sir, I hadn't lost it; we made a mistrial that court.

Q. 174. You had been trying it and failed to get damages?

A. The jury hung and made a mistrial that time.

Q. 175. What did the smoke do then?

A. It bit the garden peas; green peas.

Q. 176. What did it do to the green peas?

A. It almost killed them.

Q. 177. Those peas afterwards matured and made peas, didn't they?

A. No sir, the peas was almost a failure.

Q. 178. What else did it kill; about how many peas did you have?

A. I had about three rows across the garden.

Q. 179. What else did you have that was interfered with?

A. My beans and my corn; my corn was injured.

Q. 180. How much?

A. An acre and a half.

Q. 181. You did make corn?

A. Made a little.
Q. 182. How much?
A. I didn't measure it.
Q. 183. Now, as a matter of fact didn't you gather as much as you would have any way?
235 A. No sir, because it killed some of it, and some of my croppers, it killed their corn. I saw it myself.
Q. 184. Do you know whether or not any smoke had been in there while you were in Chattanooga?
A. No sir, I don't.
Q. 185. Do you know of your own knowledge?
A. How could I know, when I wasn't there.
Q. 186. How long had you been over at Chattanooga?
A. For some time. I left home on the first, and it was the 11th when I got back.
Q. 187. Mr. Vestal, I believe you say that you noticed smoke in there, on what day was it in June that you saw it in there?
A. I said the 3rd day of July.
Q. 188. I thought you said that it was in June?
A. It come over there in June, but this other I know was on the third of July because we had a big picnic on the 4th, and I remember that it was the third of July.
Q. 189. What did you say that hurt?
A. I saw it on the potato patch. I planted a second patch of potatoes; it killed my first crop, and it killed the leaves on my second crop.
Q. 189. I am talking about the first crop?
A. It come in there back on the 8th and 9th of June and killed the first crop; that was a failure.
Q. 190. And you had planted a later crop?
A. Yes sir.
Q. 191. And that had come up?
A. Yes sir.
Q. 192. When did you plant that?
A. Sometime in June; it had just come up.
Q. 193. What day of the week was that that you saw that smoke in there?
A. It was Friday.
Q. 194. Friday, the third day of June?
A. The 3rd day of July, sir.
Q. 195. What did it do to these potatoes?
A. It bit the leaves.
Q. 196. How much?
A. It crisped the leaves; they wasn't serious bit, but they crisped up until I knew that it was smoke, because it was in my garden that day.
236 Q. Didn't you have some pretty dry weather right along about then?
A. We had three weeks of dry weather in June, one time.
Q.198. Don't you know that the dry weather extended over the fourth of July?

A. No sir, I think that it rained the fourth of July.
Q. 199. Don't you know that that rain broke up that dry spell?
A. No sir, I think that it rained before that.
Q. 200. Do you know that it did or that it didn't?
A. I do know that we didn't have much dry weather.
Q. 201. So it is, that on the 3rd of July, you think something happened that crisped up the leaves on your potatoes?
A. I know that the smoke bit them on the 3rd of July.
Q. 202. Are you going to swear that positively?
A. I know that I saw the smoke in there; and I saw this other directly after it left.
Q. 203. What time of the day was it in there?
A. Forenoon of the day like.
Q. 204. Crisped up that afternoon did they?
A. Yes sir, they did. We smelled the smoke and talked about it.
Q. 205. They withered right up?
A. Yes sir.
Q. 206. Hurt the patch?
A. I know that it hurt it some; I don't know how much. I hadn't plowed them.
Q. 207. How much did it hurt them?
A. I can't say.
Q. 208. Did they grow right on off? A. No sir, they died later from other smoke.
Q. 209. When were they killed?
A. I don't know how many times the smoke come down in there on them.
Q. 210. When did the next smoke come in there after the third of July?
A. I think,—my recollection is that it was 'long about July 12th; I think there was three days along then that it come in there.
Q. 211. Beginning on the 12th?
A. I think now, about the 12th; I don't remember just what date.

Q. 212. I believe that you stated the smoke had been in
237 there the whole summer?
A. Yes sir, off and on, all the summer.

Q. 213. Ta-king specially about the 3rd of July, let's go back to say the 28th of June, didn't you see it there on that day?
A. I don't know that I did.
Q. 214. Was there a single day during this summer that you didn't see this smoke come in there?
A. I don't say that there was; or I don't say there wasn't.
Q. —. How long had it been before the 3rd of July before you had seen any smoke in there?
A. Sometimes for a week or more the smoke wouldn't bother us.
Q. 216. Did you see it come over there during the last week in June?
A. I don't know that I did. I know it come over there on the 3rd of July.

Q. 217. What is the reason that you can remember that; it wasn't so much?

A. I don't know why it is; but I remember that all right.

Q. 218. Did you see it come over there after the 20th of June and before the first of July?

A. From that time up to now?

Q. 219. Between the 20th of June and the 1st of July, did you see any smoke come over there?

A. I don't know that I did or didn't. I know that we saw smoke there frequently; sometimes for two weeks together wouldn't any come.

Q. 220. About the crops over on Jacks River, they in good condition?

A. They seemed to be pretty good. I saw some potatoes that had been bit.

Q. 221. Didn't anything suffer but potatoes on Jacks River?

A. It looked to be light; I can't say that it was smoke.

Q. 222. How were the crops on Jacks River last year?

A. I think they was fairly good, but there was right smart of damage to the timber, though.

Q. 223. It don't hurt the timber one time and hurts the crops, and then it hurts the crops and don't hurt the timber?

A. It don't serve anything just alike. Sometimes it bites one thing strong, and then again it don't seem to have an effect;
238 It will bite some trees worse than others, and may be next time, it won't hurt them same trees so bad.

Redirect examination by Mr. DRAKE:

Q. 1. You have been asked a good deal about hickory, you know the nature of timber pretty well, don't you?

A. Yes sir.

Q. 2. How is that in its resisting power against insects and bugs generally as compared with other timber?

A. Well sir, I am not much of a bug man, and can't say.

Q. 3. Asking you from a saw-mill man's standpoint, how is it? Is it good sound, solid timber?

A. I think it is. I think that it is all right and healthy as any other timber.

Q. 4. I believe you stated, if not state again, if you haven't found that in this North Fannin County, whether or not it has all been killed or dead?

A. A great percent of it has been killed, sir.

Recross-examination by General FOWLER:

Q. 1. Did you ever saw any hickory timber?

A. Very little, only a small per cent.

Mileage of witness: 16 Miles.

T. S. JOHNSON, being sworn to speak the truth, the whole truth and nothing but the truth, testified.

Direct examination by Mr. HILL:

Q. 1. Where do you live, Mr. Johnson?

A. I live out over in the Carter Cay district, seven miles East of Ellijay.

Q. 2. How long have you been living there?

A. Pretty near six years.

Q. 3. How long have you lived in Gilmer County?

A. All of my life except about five years.

Q. 4. When was that?

A. When I was 19 years old, I lived in Alabama.

Q. 5. How old are you now?

A. I will be sixty about the 25th of March, next.

239 Q. 6. Have you or not seen smoke in your section?

A. Yes sir, very frequently.

Q. —. See it and smell it?

A. Sometimes we would smell it.

Q. 8. What would it smell like?

A. It smelt like sulphur.

Q. 9. What does it look like?

A. It looks a kinder dark color, like common fire smoke.

Q. 10. How long have you been seeing it down there?

A. Ever since I have been living down there. Six years.

Q. 11. How often does it come in there?

A. Sometimes very often; every day for a week maybe, and then for a week we don't see any.

Q. 12. Which way does the wind come from when the smoke comes in?

A. It is generally from the North when it settles in.

Q. 13. Have you ever been up around the plants up here?

A. No sir.

Q. 14. What do you raise, what sort of crops do you raise?

A. Corn, beans, peas, wheat, vegetables of all kinds with the exception of oats; we haven't raised no oats for the last four or five years.

Q. 15. Have you ever examined your crops a short time after this smoke would come in there?

A. Yes sir, I have looked at my corn after the smoke settled in it, and it would be kinder parched up.

Q. 16. Have you seen it come down in there in silking and tasseling time?

A. Yes sir. It will kill the silks. Last year my corn had fine long silks on it, at least nine inches long, and the smoke come in there and settled down, and I went back there to look at it, and the silks was all parched up and we didn't make no corn like we ought to.

Q. 17. Did you ever notice it on the peas and beans?

A. Last year I planted peas, and after that smoke come down in there they all parched up and didn't do anything. This year I haven't tried to raise none.

Q. 18. Why?
A. I think something is killing them, and I believed it was the smoke.
Q. 19. Ever notice any potatoes?
A. Last year my potatoes parched up, and this year I had
240 I had a little patch down on the branch; I planted half of my garden there, and I planted a quarter of an acre on top of the hill up above them, and them 'tater vines they died out this summer, and them on the hill crisped up after we had a two day's smoke; them on the branch it killed them.
Q. 20. What two days were those?
A. I don't remember the dates, but it was about the time we laid by our 'taters.
Q. 21. Have you seen this smoke before then and since then?
A. Yes sir, off and on all the time.
Q. 23. What was the worst year, if you can say, that the smoke has been in there?
A. Last year was the worst. I never got a half crop of corn. I think I made 50 bushels and I ought to have got 125.
Q. 24. What effect does the smoke have on your crops, does it make them larger or smaller?
A. It makes them produce less. Last year, I could have made a third more if the smoke hadn't parched it.
Q. 25. How about oats, wheat and rye?
A. I sowed oats the first year and never got any, and I haven't sowed any since.
Q. 26. Ever notice the effect of the smoke on the other small grain?
A. Yes sir, a little. The wheat and the rye don't make full plump grains, like it ought.

Cross-examination by General FOWLER:

It is agreed by counsel for the State and for the defendant that the witness lives 24½ miles, air line, in a nearly due South direction from Copperhill and 26½ miles air line from Isabella.

Q. 1. You have just lived there six years?
A. No, I have lived around Carter Cay a good long time; only six years where I am now living.
Q. 2. How near did you live to Carter Cay?
A. Three miles.
Q. 3. What direction?
A. A little Northeast, I think.
Q. 4. Then you moved there in 1908——?
241 A. I disremember the date; it is six years ago this fall since I moved to the place I now live.
Q. 5. And you say you think that last year was the worst year on your crops?
A. Yes sir, it hurt my crops worse than any year I have been living there.
Q. 6. Your corn was hurt?

A. My corn and beans was hurt worse than anything else.

Q. 7. You mean your garden beans?

A. Tomatoes and garden beans both.

Q. 8. You raised beans didn't you?

A. Yes sir.

Q. 9. Last year?

A. I got a few messes last year; we generally raise them every year.

Q. 10. Hurt your potatoes last year?

A. Yes sir, it parched up the potatoes last year; it parches them up nearly every year.

Q. 11. You raised potatoes?

A. Yes sir.

Q. 12. Dry weather parches potatoes too, don't it?

A. Yes sir.

Q. 13. Then sometimes the bugs get on them?

A. Yes sir, but there ain't no bugs on mine this year, nor last year either, I believe.

Q. 14. Mr. Johnson you have been raising potatoes a great many years?

A. Yes sir.

Q. 15. Isn't it a fact that some years you will only raise about half a crop of potatoes on the best land you've got, and not be bothered with smoke at all?

A. I don't know about that, if we have a good season.

Q. 16. It depends on the seasons, don't it?

A. Yes sir.

Q. 17. In some seasons your potato crops fails in there regardless of smoke?

A. Some seasons a man don't get so many.

Q. 18. Now isn't it a fact, that some seasons you don't raise hardly any potatoes, regardless of the smoke?

A. I used to raise some mighty good ones.

Q. —. How long ago?

A. When I lived back up on the Blue Ridge up in the coves of the mountains.

242 Q. 20. A great deal nearer to the furnaces?

A. Yes sir, it was nearer, some nearer.

Q. 21. Wasn't it about half the distance?

A. That was before them chim*ble*ys was put up.

Q. 22. How long ago has that been?

A. It has been a good long time.

Q. 23. Ten years?

A. Yes sir, ten years or longer.

Q. 24. It's the same way with corn too, isn't it; some seasons you raise good corn, and some you don't?

A. When I lived up in there some years I made corn that wouldn't be good, but I hardly ever failed to make good corn.

Q. 25. Take the same land, some years it will make a good crop and next year it won't make a good crop; that's true.

A. Sometimes a man's land won't make a good crop on account of the season not being good.

Q. 26. Did you make a good crop of corn in 1912?

A. I disremember; I guess not though.

Q. 27. Can't you remember about it?

A. That has been three years ago.

Q. 28. You can't remember whether you did or not?

A. No sir, I don't remember in 1912, only I had sorry crops. My crops have been sorry ever since I have been on that place.

Q. 29. Maybe it's not a good place?

A. Yes sir, it is.

Q. 30. Have you got a good corn crop this year?

A. No sir, not so very good.

Q. 31. Have any drouth this year.

A. Yes sir, it has been pretty dry down there, but it don't seem like it has hurt the corn much this year.

Q. 33. How much corn did you make last year?

A. I made 25 bushels, and I ought to have made 50.

Q. 34. Did you ever make 50?

A. No sir.

Q. 35. How much did you ever make on it?

A. That's about as much as I ever made.

Q. 36. Last year, did you fertilize it?

A. Yes sir, I put the same I generally do, 100 to 200 pounds to the acre of guano. I know that something cut it off, I never could tell what it was.

243 Q. 37. I believe you said that the smoke was in there two days, was it the 8th and 9th of June?

A. It was along in the summer some time. I could see the smoke, but I never paid any attention to the time; I could I reckon have set down the dates, but I didn't and I can't remember.

Q. 38. Wasn't it during the first of June?

A. It may have been. I know that them two days the smoke come in there and settled down like the woods was afire.

Q. 39. How long did it stay in there?

A. Pretty much all the evening.

Q. 40. Have you filed a claim before this board of arbitration?

A. No sir.

Q. 41. You are expecting to, aren't you?

A. I don't know; I haven't thought about it. I ought to have some damages. If they will stop the smoke off my stuff, I will give them the damages.

Mileage of witness: 48 Miles.

JOHN MILLER, Sworn to speak the truth, the whole truth and nothing but the truth, testified.

Direct examination by Mr. DRAKE:

Q. 1. Where do you live Mr. Miller?

A. On Weaver Creek in Fannin County, about two miles South of Blue Ridge.

Q. 4. How long have you been living in that neighborhood?
A. Nineteen years last February.
Q. 5. What is your occupation?
A. Farmer.
Q. 6. How old are you Mr. Miller?
A. Forty seven years old.
Q. 7. If you have ever observed any sulphur smoke in that neighborhood for the last few years, tell all about it?
A. Yes sir, I have. It comes in there and settled down on the timber, and after it settles down on the timber the leaves turn brown and drop off, and when it settles on the timber as much as the second time the timber dies. When it settles down over the orchards the leaves turn brown and crisp up and it kills it. In some places
244 it will stop the growth of the timber for that year. When it settles down on the peaches, the peaches begins to rot and dry up and drop off, and if it settles down the second or third time it generally kills the trees. When it settles down on the irish potatoes, the leaves begins to turn brown and the blooms drop off and it stops the 'tater right there, something about like a frost would, you might say. When it settles down on the corn, it commences to spe-k up and turn yellow and it will turn the tassel black, and the top and tassel will give down that way, and the tassel dies, and the corn don't do no good and don't make no corn to amount to anything, and the fodder is rotted and speckled up brown, and it ain't no good. I have got some that way, and I didn't gather no corn; it wasn't no good at all.
Q. 8. What year was that?
A. That was back about six years ago.
Q. 9. How has it been for the last two or three years?
A. For the last two or three years it has been right bad on my place. When them fumes comes in there and settles down on the timber, it burns the leaves and they drop off, and along this summer it has been the same way.
Q. 10. Have you seen much smoke down in there this summer?
A. Yes, sir, it has been in there every few days through June, July and August; Sunday it was in there pretty bad and last Monday it was in there.
Q. 11. Was there any smoke in there in 1913 last year?
A. Yes sir, smoke was in there in 1913 and in 1914 and 1912; all along there; it has been in there bad for the last five or six years.
Q. 12. Has it killed any timber in that neighborhood?
A. Yes sir, it has killed a sight of timber, and the timber is there to show for itself; lot of trees there that the leaves have turned brown and drop off, sorter like frost had bit them for six years back, and some of the trees is dead and lying on the ground. It has ruined my water-melons, and my sweet 'taters, and irish 'taters. The fumes of this smoke would settle down in there. I could see it and smell it. When a man can see this smoke and smell it and taste it, and see it do this damage what else can it be but the smoke.
I don't ask no man to take my word for it; I can prove what
245 I say by as good citizens as there is in the country, and I can take a man and show him what it has done, and that's

all I have got to say. It has damaged the crops all these years in there I am satisfied over 100%. I have got 300 peach trees and apple trees, and my apple trees is drooping and dying and crisping up from the fumes of this smoke in there, and it wasn't like that until this smoke did come in there, and it's right there to see. I live fifteen miles from Ducktown a South course and before this smoke come in there and settled down about six years ago I had good crops, and after it come in there everything has turned yellow, not plum yellow but yellow spots, and the blooms sheds off. I had four potato patches and I didn't make but about four bushels, and then they wasn't no good, the 'taters was little; not bigger'n my thumb.

Q. 13. I will ask you this, if before you were bothered by this smoke you could raise irish potatoes?

A. Yes sir, as fine as you ever saw; irish potatoes; sweet potatoes, anything you wanted, and we had all the apples and peaches we wanted. Then we had fine corn, beans and pumpkins. When that smoke would come in there and settle on my pumpkin vines they would all crisp up that way, and I have hauled off as many as five and six loads of pumpkins; and my pea vines, when that smoke would come down on them, the leaves would all crisp up and die and we wouldn't make any peas; the leaves would drop off on the ground and I can't raise no peas any more.

Q. 14. I believe you said that was a good country for peas naturally?

A. Yes sir, we could make fine peas before that smoke commenced coming in there, and since then we haven't been able to raise any peas at all. Last year my pumpkins done tolerable well, but my peas, the bigger part of them shed their leaves.

Cross examination by General FOWLER:

It is agreed between counsel for the State and the defendant
246 that the witness lives 12-1/2 miles air line, in a direction a little East of South of Isabella, and 11 miles from Copper Hill.

Q. 1. How long have you been living there?

A. Nineteen years on the 15th of February, since I come to Fannin County. I was born and raised in Gilmer County. I have lived ninteen years at that place.

Q. 2. Do you own the place?

A. Yes sir; I own lot 26, fifty acres; lot 27, 50 acres, and lot 47, 60 acres and lot 25, 40 acres.

Q. 3. How many acres of land have you under cultivation?

A. 30 to 40 acres, in corn.

Q. 4. The remainder of that in timber land?

A. I have got 75 or 80 acres cleared and the rest of it is timber land.

Q. 5. You own the timber?

A. Yes sir, I own the timber.

Q. 6. That ever been cut over?

A. Mr. Bell cut some timber out of there about four years ago
Q. 7. Over how much?
A. He cut—I don't know exactly how many acres; he cut some on lot 26 and some on 47 and some on 25.
Q. 8. He cut what varieties of timber?
A. He cut some of the poplar, some pine and some oak.
Q. 9. Been any forest fires over your lands?
A. No sir, not to amount to anything for several years; we have about quit burning the woods on account of the timber.
Q. 10. When was it last burned over?
A. It was last burned down in there about two years ago, I believe; there wasn't much burned; none you might say on my land
Q. 11. You have known your lands to be burned over entirely by fire?
A. Yes sir, they was burned over about ten years ago, but it was pretty well along in the fall of the year after the leaves had all fell off.
Q. 12. Has it been burned partly since that time?
A. Yes sir, some of it has been burned since that time, in the fall of the year, not much but a little of it. I stopped it.
247 Q. 13. How did you stop it?
A. I stopped it by getting a brush and beating it out in front of the fire, and I kept that up until I got the fire out.
Q. 14. I believe you said that you hadn't noticed any smoke until about five or six years ago?
A. I noticed it over five or six years ago; it was in there but I wasn't positive that it was this smoke that was doing this damage then. After that we took notice of these things it was doing so much damage in our crops and our forests.
Q. 15. When was the first year that you noticed the smoke in it there doing any special damage?
A. It was about six years ago.
Q. 16. Then it was in 1908?
A. Yes sir.
Q. 17. What did you notice at that time?
A. I noticed my timber and my corn. It settled in my corn there one day and I was back up there the next morning, and it attracted my attention to the corn; the corn looked like it was frost bit; it was drooping down just like it was frost bit, and right straight after that it commenced to speck up and turn yellow; yellow specks on it, and then it would dry up, and at the lowest calculation there was at least 100 bushels of that corn rotten, and it couldn't have been nothing else but that smoke, because just as soon as it settled in there the shuck turned brown and from brown to black, and it couldn't be nothing but that smoke, because I never did have corn in my life, until the fumes of this smoke come in there that done it that way; it just wilts down and in a few days it turns brown, and in a few days the leaves drop off. Then after the fumes of this smoke come in there and settled down on the timber the leaves would turn brown with brown speck on them; first commenced like frost bite; it has them brown specks and the

it turns brown, and they begin to drop off, and a heap of them trees dies after it hits them the second time. I can show trees that it has bit. I don't ask no man to take my word for it; the timber is there to show for itself, and I can show you apples trees; I can show you exactly how they are. On the corn it don't
248 settle on it altogether. It will settle on one stalk here and two stalks there; some pretty close together, and it will kill it plum dead, and the next time it comes in it will settle on the other corn that it didn't kill before, and wipe the whole thing out. And the tomatoes, when it settles on the tomatoes it just dries up and it kills the tomato just like frost bite.

Q. 18. Are you through now?

A. I am just telling you what it does.

Q. 19. Are you done?

A. I reckon so; it ruins my cherry trees.

Q. 20. Then, you are not done?

A. It dries up my cherry trees just like it does the timber.

Q. 21. It hasn't dried you up, has it?

A. It aint dried me up, and if you had to work as hard as I do, and see your stuff all ruined——

Q. 22. I guess I work as hard as you do.

A. I work hard for my living, and I pay my taxes and I am a citizen of my county.

Q. 23. I am asking you when that smoke come in there?

A. That smoke?

Q. 24. Yes that smoke, I believe you said that it was five or six years ago?

A. Six years ago was when I noticed something coming in there and damaging me.

Q. 25. Well, that was 1908?

A. Yes sir, about six years ago.

Q. 26. You had some corn you say rotted that year?

A. Yes sir.

Q. 27. How was it in 1909?

A. Well, we had some smoke in there, but it didn't damage me like it did six years ago.

Q. 27. How was it in 1910?

A. I can't tell you much about that year because I didn't pay so much attention to it until about six years ago.

Q. 28. How was it in 1911; that was three years ago?

A. 1911? We have had some smoke in there every year; had some every year more or less.

Q. 29. How was it in 1912, two years ago?

A. We had a lot of smoke in there and it done a lot of damage.

Q. 30. How was it last year?

A. Last year we had a whole lot of smoke in there and it done a right smart of damage, and it has every year back up until
249 six years ago.

Q. 31. Did you see it in June of this year, during the whole month of June?

A. I didn't see it the whole month of June, but along in June we had smoke in there.

Q. 32. Did you have it the first part of June?

A. I never noticed any the first part of June.

Q. 33. What part of June was it?

A. As well as I remember it was along after the 10th of June; along that way.

Q. 34. And after the 15th of June?

A. I disremember about that.

Q. 35. After the 20th?

A. We had it along in June, I don't remember the dates.

Q. 36. After the 25th of June, didn't you have more of it the latter part of June than you had along in the first of June?

A. We had some along about the 10th of June, as much as at any time.

Q. 37. Did you have as much the latter part of June as you did the first part of June?

A. I don't think we did.

Q. 38. How much did you lack?

A. I don't know how much.

Q. 399. You don't know whether they had any at all in June, do you?

A. Yes, we had some along in June.

Q. 40. What time in June was it?

A. Let me see—I put it down in my book.

Q. 41. What kind of a book did you put it down in?

A. I put it down in my day book?

Q. 42. Where is that book?

A. I give it to one of my friends, and I told him to keep it in there.

Q. 43. Have you got that friend here as a witness?

A. Well he said that he would be here to-day and I wanted to see whether he had come or not.

Q. 44. Who is he; what is his name?

A. It's one of the Buchanans.

Q. 45. Which one of the Buchanans?

A. It's one of the Buchanans; he ought to have it himself.

Q. 46. You give it to him?

A. I left it there at his house.

250 Q. 47. Why did you leave the book at Buchanan's; why didn't you keep it yourself?

A. Because we taken the time and set it down on the book and left it there on that account.

Q. 48. Did you put it down or did he put it down?

A. He put it down himself.

Q. 49. Any way, you haven't any independent recollection when there was smoke in June at your place?

A. As I remember it it was along the 9th and 10th of June, along there.

Q. 50. I believe, Mr. Miller, you have filed a claim for damages have you?

A. Yes sir.
Q. 51. With this board of arbitrators?
A. Yes sir.
Q. 53. How much are you claiming?
A. I am claiming, as well as I recollect, $250.00.
Q. 54. That extends over what length of time; over what years?
A. For this year.
Q. 55. You are not claiming anything for last year?
A. Yes sir, but I just put in what they done to me this year; 1914.
Q. 56. Haven't they been paying damages in here for some years?
A. I have been paid some damages.
Q. 57. Through this board of arbitration?
A. Yes sir.
Q. 58. Have you received any heretofore?
A. Yes sir, I was paid some last year.
Q. 59. How much did you receive last year?
A. I got about forty dollars.
Q. 60. How much did you put in for?
A. I forget exactly how much.
Q. 61. How many years did you put in for?
A. I think I put in for $1,000 for all the damages for years back.
Q. 62. Out of $1,000 you received $40.00?
A. They gave me $40.00.
Q. 63. And you are claiming $250 damages for this year?
A. Yes sir, I sent it in for $250.00.
Q. 64. Have you been paid for this year?
A. No sir.
Q. 65. Has your claim been passed on?
A. No sir.
251 Q. 66. Do you know whether or not they have been on your propetry this year?
A. Yes sir, the come up there and was taking names, I think was their business.
Q. 67. You don't know what they have done with your claim?
A. No sir, I don't know what has been done about it.
Q. 68. One of the gentlemen is here in Blue Ridge now, isn't he, one of the arbitrators?
A. I don't know him.

Redirect examination.

By Mr. HILL:

Q. 1. I will ask you, if you know, if this arbitration board doesn't have a certain amount of money to distribute out among you citizens the best they can, and don't pretend to give you all you are damaged?
A. Yes sir, they just have a certain amount of money to divide among them that has suffered from the smoke fumes, and they ain't nothing like paid me what I am damaged.

Mileage of witness: 4 miles.

R. H. SMITH, being duly sworn to speak the truth, the whole truth and nothing but the truth, testified as follows:

Direct examination.

By Mr. HILL:

Q. 1. How old are you Mr. Smith?
A. I am 38 years old.
Q. 2. Where do you live?
A. I live over in Morgantown District; mile and a half from Morgantown.
Q. 3. Which direction?
A. South.

It is admitted by and between counsel for the State and the defendant that the witness lives 12½ miles Southeast of Copperhill and 13¼ miles from Isabella.

Q. 4. How long have you been living there?
A. I was born and raised on the place I am living on now.
Q. 5. Have you ever worked out at either one of the copper plants?
A. Yes sir.
252 Q. 6. Are you familiar with the odor and the appearance of the smoke that comes out there?
A. Yes sir.
Q. 7. Have you, or not, seen that smoke in your section of the country?
A. Yes sir, I have seen it there.
Q. 8. Do you raise crops over there Mr. Smith?
A. Yes sir.
Q. 9. What do you raise?
A. Wheat, rye, oats, corn, potatoes, watermelons and things of that kind.
Q. 10. Have you ever noticed the crops after the smoke had settled in there?
A. I haven't never taken special notice to it.
Q. 11. Is there any timber in there in your way?
A. Yes sir.
Q. 12. Have you ever seen the smoke in the timber?
A. Yes sir.
Q. 13. Have you ever noticed the timber after the smoke had been in there?
A. Yes sir.
Q. 14. What was the condition of the timber?
A. A lot of the timber is dead. I don't know what caused it. But after the smoke had been in there, three or four days afterwards it would turn brown like, like it does closer to the mines.
Q. 15. Have you seen it around the mines?
A. Yes sir.
Q. 16. State whether or not it is effected the same as it is around the mines ?
A. Yes sir.

Q. 17. I believe you say that nearly all of the timber is dead around there?
A. Yes sir.
Q. 18. Have you noticed the timber in there this year?
A. Yes sir, I have seen it in there several times.
Q. 19. How many days during the present year have you seen it in there?
A. I can't tell any certain dates except one time, and the reason I remember that is I went to Copper Hill.
Q. 20. What day was that?
A. The 3rd day of July.
Q. 21. Did you see any smoke in there then?
A. Yes sir; right there at my place where I live. We spoke about it. Me and another fellow was talking about it. We was talking about the smoke.
253 Q. 22. You went to Copperhill on that day?
A. Yes sir.
Q. 23. Was it running then?
A. No sir.
Q. 24. Did you look at the plant?
A. Yes sir; I was there in about 150 yards of it.
Q. 25. What plant is at Copperhill?
A. The Tennessee Copper Company.

Cross-examination.

By General FOWLER:

Q. 1. How long have you lived there?
A. Thirty-seven or eight years.
Q. 2. When did you first notice smoke in that section of the country?
A. It has been coming in there off and on for several years.
Q. 3. How many—five?
A. Yes sir, it has been that long.
Q. 4. Six?
A. I can't give you the exact time; I never paid any attention to it much.
Q. 5. Will you swear that it has been six years?
A. I don't know that I will.
Q. 6. What is your best judgment?
A. It has been that long; *give* or six years. I never paid any attention to it. I never thought about it and never tried to get anything.
Q. 7. Have you filed any claim?
A. No sir.
Q. 8. Do you own any land in there?
A. Yes sir, my father does.
Q. 9. You haven't considered any damages?
A. Well, we have; several others has got damages on both sides of us.
Q. 10. I am talking about you?

A. I am talking about that too: that's all I know about it.
Q. 11. You said something about some dead timber over there?
A. Yes sir.
Q. 12. What kind was it?
A. Spanish Oak; Red Oak; Black Oak and Hickory.
Q. 13. Do you know what killed it?
A. I don't.
Q. 14. You know nothing about the diseases of timber?
A. No sir I don't and ain't claiming to.
Q. 15. How long has that timber been dead?
A. Four, five, six or seven years.
254 Q. 16. Seven or eight?
A. I can't tell you, I never taken any note of it.
Q. 17. Has it been dying ten years?
A. It may have been; I haven't taken any note of it.
Q. 18. Wasn't the timber dying in there long before any smoke ever came in there?
A. I suppose some died.
Q. 19. Don't you know that it has?
A. I won't say that there was or there wasn't.
Q. 20. Haven't you known of timber dying all over there ever since you were a boy?
A. Yes sir.
Q. 21. When was the first smoke that you noticed in there this year?
A. I have noticed smoke in there all along during the Spring.
Q. 22. What months?
A. The first I noticed was along in May, and then in June; about the 22nd of June it was down in there on my tomatoes and potatoes.
Q. 23. On the 22nd of June?
A. Somewhere along there.
Q. 24. Didn't you see some on the 23rd day of June?
A. I have seen it, I suppose, but I never taken note of what time it was.
Q. 25. Didn't you see some on the 24th day of June?
A. I can't tell you.
Q. 26. Didn't you see some on the 25th day of June?
A. I can't tell you; I can't tell you the dates.
Q. 27. Don't you know that there wasn't a week in June that you didn't see smoke?
A. There was lots in there; it was worse some days than it was others.
Q. 28. Will you testify positively that there was a single week that there wasn't smoke in there?
A. I don't know; I never paid any attention.
Q. 29. You saw it nearly every day, didn't you?
A. I saw it when the smoke was down in there; I never taken any dates.
Q. 30. Wasn't that nearly every day in June?
A. It might have been every days; I can't say.

Q. 31. What is your best judgment—did you see it every day or not?

255 A. I can't tell you.

Q. 32. What is your best judgment about every day?

A. I can't say sir.

Q. 33. Are you or not positive that it was in there at least every other day in June?

A. 33. No, I wouldn't be positive that there was.

Q. 34. Have you known it to skip as many as three days?

A. Yes sir, I have seen it there in the morning, and then it would all be blown back away from there.

Q. 35. I am talking about June, when the wind set from the North?

A. I can't say about that.

Q. 36. Take the 23rd and 24th of June, how much smoke was there in there those days.

A. I can't tell you.

Q. 37. Give your best judgment?

A. I can't tell you. for I don't know.

Q. 38. How many days do you think that it was in there?

A. It's just as I said; I have no recollection about it; I didn't take any dates; it might have been every day and then it might not have been so much.

Q. 39. Give your best judgment about it, I am not asking you to guess at it, or that it might have been.

Mr. DRAKE: We submit that he has answered the question, when he stated that he has no recollection on the subject. Overruled. Appeal prayed and granted.

A. I don't know; I didn't have no interest in it one way or the other.

Q. 40. If you had no interest then, why afterwards?

A. I haven't.

Q. 41. Didn't you have as much interest as you did on the 3rd day of July?

A. I never taken no notice about it; I told you that I taken notice of that day because we went to town on that day.

Q. 42. It was there on the second day of July wasn't is?

A. I suppose that it was.

Q. 43. It was there on the first day of July?

A. I can't say about that.

Q. 44. It was there on the 30th day of June wasn't it?

A. I think that it was.

Q. 45. On the 29th day of June?

A. I can't tell you; as I told you a while ago, I didn't take any dates or any particular notice.

256 Q. 46. You think that it was there on the 30th day of June?

A. I suppose so.

Q. 47. You said that it was there on the 30th of June, now was it there on that date?

A. I can't tell you, I wouldn't be positive about that.

Q. 48. Who got you to come here to testify?
A. Wasn't nobody; I got a subpœna day before yesterday; I don't know who sent it.
Q. 49. Who have you talked with?
A. I haven't talked with a living soul; I haven't talked with anybody since I come here.
Q. 50. Who have you talked with about testifying in this case?
A. I have talked with that gentleman there (Mr. Hill) and with another fellow, Mr. Drake.
Q. 51. What day of the week was it that you went to Copperhill?
A. On Friday.
Q. 52. What did you notice up there; did you see the smoke?
A. Yes sir; I see'd it and smelt it too.
Q. 53. What did it look like?
A. It looked like smoke to me. I can't tell you what it looked like; it looked kinder blue.
Q. 54. Didn't it look exactly like a fog?
A. No sir.
Q. 55. You do have fogs in the mountains, don't you?
A. Yes sir, but it don't smell like this smoke.
Q. 56. You have seen many a fog on those mountains that looked exactly like that smoke, haven't you?
A. I don't know that I have.
Q. 57. Don't you know that the appearance of that smoke is exactly like a mountain fog?
A. There is very little difference as I can tell.
Q. 58. There had been a dry spell over this country up to the third of July,—didn't it rain on the 3rd of July?
A. No sir, not on the 3rd; it rained on the fourth.
Q. 59. It didn't rain at all on the 3rd?
A. Not where I was, no sir.
Q. 60. Where were you during that whole day?
A. I was at home until twelve o'clock; the rest of the day I was between home and Copper Hill.
Q. 61. Who went with you?
A. Mr. John Turner.
257 Q. 62. Who is he?
A. He is a man that lives on the Chastain place, by the name of John Turner.
Q. 63. Who told you to go to Copperhill?
A. I told myself. I hired him to go down there with me after some cans.
Q. 64. Hired him to go?
A. Yes sir.
Q. 65. How many cans did you get?
A. Ten dozen.
Q. 66. Carry them back on the horse?
A. No sir, we carried them back in the wagon.
Q. 67. What time did you get back?
A. We got back between eleven and twelve o'clock on the fourth.
Q. 68. You didn't notice much smoke in there that day, did you?

A. The fourth?
Q. 69. The third?
A. It was the third that I noticed it being in there so much.
Q. 70. What do you mean by so much?
A. That is being so much smoke.
Q. 71. How long did it stay?
A. Pretty much all day. It was in there when I left home, and down all the way from home to Copperhill.
Q. 72. The whole distance along?
A. It was along on the mountains; I don't know that it was down along where we was traveling, but it was showing up on the mountains.
Q. 73. You mean that you could see the smoke on the mountains?
A. Yes sir, all around until we got to the top of the hill.
Q. 74. Do you know what that came from?
A. It came from the Isabella plant.
Q 75. How do you know?
A. I see'd it coming from there from the top of the hill.
Q. 76. Do you know what kind of smoke it was?
A. No sir.
Q. 77. Didn't it come from the power plant?
A. I can't tell you; it come from out about the furnace: I can't tell you what it comes from.
Q. 78. You don't know whether it came from the power plant or not?
A. I don't know, for I wasn't over there.
Q. —. Were you close to the Isabella Furnace?
A. I was. I was within three or four miles.
258 Q. 79. You didn't notice any smoke at your place on the 8th and 9th of June?
A. I can't tell you about that.
Q. 80. There wasn't anything hurt on your place on the 8th and 9th of June?
A. I can't tell you when it was hurt; I haven't had any thing hurt except potatoes, peas and beans, and I can't tell you what done it, but it looked like that smoke.
Q. 81. Potatoes, beans and tomatoes?
A. Yes sir.
Q. 82. How many peas did you have?
A. I have got out about three acres, I reckon, in the corn.
Q. 83. You think that was hurt along in May?
A. No sir, along in June.
Q. 84. Do you think it was hurt about the 8th and 9th of June, somewhere along there?
A. No sir, I can't tell you, but it was some time in June.
Q. 85. You think your tomatoes were hurt along about the same time?
A. Yes sir.
Q. 86. And your potatoes were hurt along about the same time?

A. Yes sir, about that time. I don't know that anything of mine was hurt on the 3rd of July; I never noticed.

Q. 87. Before that there had been some little scorching along back in June?

A. Yes sir.

Q. 88. I believe you said, Mr. Smith, that you had worked over at Ducktown?

A. Yes sir.

Q. 89. When did you work there?

A. It has been six or seven years. I haven't worked over there since they built the acid plant.

Q. 90. Which plant did you work for?

A. I worked for the Ducktown Company, but I haven't worked there since they started the acid plant.

Q. 91. You do know, don't you that after that high stack was constructed by the Tennessee Copper Company that the smoke came over in your section of the country?

A. It come more than it had been coming, and it done more damage it seemed like.

Q. 92. Have you been here in Blue Ridge when every tree
259 around here was scorched before that acid plant was put in?

A. Yes sir.

Q. 93. In 1906, 1908 and possibly, 1909, isn't it true that right around Blue Ridge here the trees were all scorched?

A. Yes, sir; I have seen them scorched all around over the creek and on back of the river, and beyond the river from my place.

Q. 94. What years was that?

A. I can't tell you, but it was after the high stack went up.

Q. 95. And before the acid plants were installed?

A. Yes, sir.

Q. 96. That was about the time you were working there wasn't it?

A. The timber has been burned in there since then.

Q. 97. I am not talking about that, I am talking about when it was badly burned before these acid plants was put in?

A. I can't tell you.

Q. 98. Don't you know that these acid plants went into operation along about 1909 or 1910?

A. Somewhere along there; I can't give the dates.

Q. 99. Don't you know that since that time, there has been comparatively little scorching through the Blue Ridge?

A. The timber has not been burned altogether as bad as it was back of that.

Q. 100. Don't you know that through the whole Blue Ridge down here from where you came, that there has been but very little scorching as compared with what it was for five or six years before that?

A. It has not been so bad.

Q. 101. It hasn't been near so bad, has it?

A. I can't tell you how bad it has been, but I have seen but very little damage on anything except tomatoes and beans and such like.

Q. 102. During the present year?
A. Yes, sir.
Q. 103. The same way during last year?
A. Yes, sir.
Q. 104. Wasn't it the same way in 1912?
A. I think it was; I had tomatoes and potatoes and lost them.
Q. 105. That in 1912?
A. For three and four years back I haven't had any luck with potatoes.
Q. 106. You haven't noticed any substantial damage to the forests?
260 A. I haven't on our place, or anywhere else; I haven't paid any attention to it.
Q. 107. You have been to Blue Ridge a number of times the last six or eight years?
A. Yes, sir.
Q. 108. You come a few times every year?
A. Yes, sir.
Q. 109. Been around Morgantown?
A. Yes, sir.
Q. 110. You have been up around Mineral Bluff, haven't you during these years?
A. Yes, sir.
Q. 111. And on the mountains?
A. Yes, sir.
Q. 112. You travel these sections between where you live and the copper plants every year?
A. Yes, sir, more or less.
Q. 113. You peddle your produce at Copperhill?
A. No, sir.
Q. 114. You don't produce anything to sell?
A. I have never taken any to Copperhill. I generally sell what I have to sell at Mineral Bluff.

Mileage of witness: 12 miles.

D. M. BUCHANNAN, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. How old are you Mr. Buchannan?
A. Forty-eight.
Q. 2. Where do you live?
A. I live a mile and a half East of here.
Q. 3. Of Blue Ridge?
A. Yes, sir.
Q. 4. On what creek or near what creek do you live?
A. Right near what they call Weaver Creek.
Q. 5. How far do you live from Mr. John Miller who was on the witness stand a while ago?
A. 'Bout a mile and a half.
Q. 6. In what direction do you live from Mr. Miller?

A. Mile and a half Southwest.

Q. 7. Have you seen any sulphur smoke in your neighborhood this year?

A. Yes, sir.

Q. 8. Did you take any dates when you saw it in there the worst?

261 A. Yes, sir, I taken three dates the worst I saw.

Q. 9. What dates were those?

A. The first and eighth and thirteenth of June.

Q. 10. Of this year?

A. Yes, sir.

Q. 11. What did you put it on?

A. I put it down on the calendar.

Q. 12. Have you that calendar with you?

A. No, sir, it's at home.

Q. 13. Could you see the smoke on these dates?

A. Yes, sir.

Q. 14. Could you smell it?

A. Yes, sir.

Q. 15. How did it smell?

A. It smelled like sulphur smoke.

Q. 16. You ever been over about the plants?

A. Yes, sir.

Q. 17. Did you smell the smoke around them?

A. Yes, sir.

Q. 18. How did it compare with the smoke you smelt around there?

A. It had the same smell.

Q. 19. What effect did that smoke have on the timber in your country?

A. I have seen some timber that has been bit by something.

Q. 29. Is there any dead timber in that country?

A. Yes, sir, a right smart of dead timber in places.

Q. 30. You said that you had seen the timber bit, when did you see that?

A. Along in June. I noticed the dead leaves; they seemed to be crimped up.

Q. 31. You are a farmer?

A. Yes, sir.

Q. 32. What varieties of crops do you raise?

A. Corn and potatoes, and some garden truck.

Q. 33. Have you ever seen any smoke in your garden truck and afterwards observed any changes in it; if so, what?

A. I think that my potatoes, garden beans and tomatoes have been injured by something.

Q. 34. That this year?

A. Yes, sir.

Q. 35. When did you see smoke in there?

A. All along last May and on up in June.

Q. 36. Did you see any in July and August?

A. Yes, sir; the second and third days of July was pretty bad smoke.

262 Q. 37. How long has this smoke been coming in on you there?

A. I don't recollect, I guess five or six years.

Q. 38. How long have you lived there?

A. Seventeen years; I was raised right here.

Q. 39. Are you a land owner?

A. Yes, sir.

Q. 40. How much land do you own?

A. Eighty acres.

Q. 41. Did you see any smoke in there last year and year before last?

A. Yes, sir.

Q. 42. How has it been all along for the last few years?

A. It has been pretty bad for the last three or four years or maybe longer; I don't remember.

Q. 43. How has it effected your gardens and your crops?

A. It has hurt my vegetables and garden stuff; I haven't seen so much difference in the last three or four years. My corn crop is not hurt as bad this year as it has been.

Q. 44. How about last year?

A. I don't think my crop was hurt as bad as it has been by the smoke.

Q. 45. Have you any particular crops that have been damaged by the smoke?

A. Yes, sir, my potatoes and my garden truck, and my orchard.

Q. 46. How much orchard have you got?

A. Something like 250 or three hundred trees.

Q. 47. How does it effect your orchard?

A. The fruit trees all sheds their leaves, and a heap of them turn brown, and the fruit is small and no good.

Cross-examination by General FOWLER:

Q. 1. How long have you lived there?

A. Seventeen years.

Q. 2. You own the place?

A. Yes, sir.

Q. 4. Up on the mountains?

A. No, sir, right at the end of the mountain.

Q. 5. What kind of soil is it?

A. My land is mostly red clay.

Q. 6. How long has it been cleared?

263 A. Right where I live, it has been cleared for 50 years.

Q. 7. Good deal of it is pretty well worn?

A. It has been tended a long time.

Q. 8. Naturally you can't make as good crops as you used to?

A. No, sir, you can't make as good crops as you could when it was fresh; about the only way to make a crop is to fertilize it well.

Q. 9. Have to have fertilizer to make much of a crop anyway?

A. Yes, sir, you have to do that to make any crop much. Might be some patches, you wouldn't.

Q. 10. When you have a dry spell that hurts the corn?

A. Yes, sir.

Q. 11. High corn dries quickly.

A. Yes, sir. I have some branch bottom corn.

Q. 12. I believe you said that this year it didn't hurt your corn so badly?

A. No, sir, I don't think it hurt my corn.

Q. 13. You had right smart of a drouth in June didn't you?

A. Yes, sir.

Q. 14. Along in May and in June?

A. Yes, sir, last May and on up in June.

Q. 15. Didn't that hurt your corn?

A. Yes, sir, it hurt it some; garden stuff has got to have rain.

Q. 16. Wasn't it about six weeks through here, the whole section that it was perfectly dry?

A. No, sir, we had some few showers; we ain't had no good season.

Q. 17. That extended over a period of five or six weeks?

A. Yes, sir, about five or six weeks we didn't have much rain.

Q. 18. Wasn't there a good deal of complaint through the neighborhood about the drouth?

A. Yes, sir, several complained about their gardens dying.

Q. 19. That drouth was broken up by a rain on the 4th of July, wasn't it?

A. I don't remember when it first rained.

Q. 20. Wasn't it right along about the first part of July?

A. Yes, sir.

Q. 21. Do you remember what kind of a day the fourth of July was?

264 A. Yes, sir, I think I do.

Q. 22. Was it a rainy day, or was it a pretty day?

A. It rained some.

Q. 23. Wouldn't the drouth cause the leaves of potatoes to crimp up?

A. I suppose that it would; it wouldn't like it would if they had rain.

Q. 24. You have seen that cause the potato vines to dry up and crimp up?

A. Yes, sir, I have seen the vines dry out.

Q. 25. As a matter of fact, if Irish potatoes don't get plenty of rain, they die?

A. They wouldn't make a good crop like they would if they had plenty of rain.

Q. 26. You have known potato crops to fail entirely for lack of rain?

A. Yes, sir, I have knowed that.

Q. 27. You have also known the potato bugs to kill them?

A. Yes, sir, I have seen potato bugs do it; seen them eat up a patch, but I was never bothered with potato bugs myself.

Q. 28. During the present year, your garden was damaged to some extent?

A. Yes, sir, I think along in June or the last of May.

Q. 29. I believe you said that the smoke was in there on the first, eighth and thirteenth of June?

A. Yes, sir, thems the only dates I kept down, that I saw it about my house.

Q. 30. You think that it does scorch your vegetables?

A. Yes, sir, I think that it done some damage in there. We have smoke in there all along; nearly every day we have some.

Q. 31. That was during that dry spell?

A. Yes, sir, it was pretty dry then.

Q. 32. Did you ever work at the furnaces?

A. No, sir.

Q. 33. You have been there?

A. Yes, sir, several times.

Q. 34. Sold produce there?

A. No, sir.

Q. 35. Where do you sell your produce?

A. I don't sell any. I ain't making enough to do me.

Q. 36. Don't you work out anywhere?

A. No, sir; I just farm; that's all I do.

Q. 38. How much do you own there?

A. Eighty acres.

265 Q. 39. You have been living at that place how many years?

A. Seventeen years.

Q. 40. You think that it has been five or six years ago before you noticed any smoke at all?

A. I can't tell you how long it has been.

Q. 41. Do you remember when the Tennessee Company built that high stack?

A. I don't recollect the dates.

Q. 42. It was after the construction of that high stack that you noticed the smoke, wasn't it?

A. I don't recollect that I noticed any damage or anything before that.

Q. 43. That was in 1906 or 1907, or do you remember?

A. I don't remember the dates.

Q. 44. After that high stack was constructed, for two or three years, didn't you notice around in Blue Ridge and where you lived, and practically all over this whole section in here, that the leaves were browned?

A. I have seen the leaves fall off the trees here and yonder.

Q. 45. Haven't you seen it here in Blue Ridge?

A. I have seen it in patches here and yonder.

Q. 46. Badly burned?

A. Yes, sir, and then you couldn't discover so much in other places.

Q. 47. It was very much worse than it is now?

A. It seemed to be bad on the timber; I know that I noticed the leaves falling off pretty bad.

Q. 48. Do you know when those acid plants were put in?

A. No, sir.

Q. 49. Do you remember the time when the acid plants were put in?

A. Yes, sir.

Q. 50. Since that time it has not been so bad, has it?

A. I haven't seen it so bad on the timber, but on the vegetables, it is about as bad.

Q. 51. Isn't there something else the matter with your potatoes?

A. There is something or other; I don't put it all on the smoke.

Q. 52. You raised them all right up to three or four years ago?

A. Yes, sir.

Q. 53. For the last three or four years, you haven't?

A. Might have been longer than that.

266 Q. 54. Five or six year-?

A. Might have been five or six years.

Q. 55. What the trouble really is, you can't tell?

A. I don't know that it is the smoke altogether; I can't say about that; I know that my garden and potato patches don't do as well as they did.

Redirect examination by Mr. DRAKE:

Q. 1. You have been asked about the drouth and the effect of it on your garden truck and farm stuff, I will ask you whether or—a drouth could come down in there and stay two or three hours; settle down on your garden and crisp up the leaves like frost bite?

A. No, sir.

Q. 2. You never saw it do anything like that?

A. No, sir.

Q. 3. I will ask you if this isn't a very fine country for good seasons and plenty of rain?

A. Yes, sir; generally we ain't had no drouth to hurt for the last several years.

Mileage of witness: Three miles.

J. M. CARTER, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. How old are you?

A. Fifty-six.

Q. 2. Where do you live?

A. I live in a mile and a half of Morgantown.

Q. 3. Which direction from Morgantown?

A. Northeast. I live adjoining the land of J. C. Addington.

Q. 4. How long have you lived at your present place?

A. About nineteen years. Four years I lived in Morgantown, but I still owned the place.

Q. 5. How long have you lived in Fannin County?
A. Twenty some odd years.
Q. 6. What is your occupation?
A. Farming and teaching.
Q. 7. School teacher, you say?
A. Yes, sir.
Q. 8. How much land do you own up there?
A. Two hundred and seventy acres.
Q. 9. How much is cleared and in cultivation, and how much in timber, about how much.
267 A. *10.* I have got about seventy acres in cultivation.
Q. 11. What varieties of crops you raise and attempt to raise on your farm?
A. Wheat, rye, oats, corn, potatoes and fruits.
Q. 12. Are you acquainted with the timbers in this section, and the varieties?
A. Yes sir.
Q. 13. In your nineteen years of living over at Morgantown and speaking for the last five or six years, have you observed any sulphur smoke in your community?
A. Yes sir.
Q. 14. Did you see it in there in 1913, and if so, to what extent.
A. Yes sir, it was pretty heavy on us part of the time over there.
Q. 15. If you have had any crops injured, what kind of crops and how much of it?
A. We had about forty-four acres in cultivation last year in corn, potatoes, etc. and oats.
Q. 16. Did you have them oats put in good condition or not?
A. Yes sir, in fairly good condition.
Q. 17. What kind of crop did you make?
A. I got nine little shocks.
Q. 18. How many bushels did them nine shocks make?
A. Three or four bushels.
Q. 19. How many bushels ought you to have made off of them oats, off that land, the way the land was prepared, and all, if it hadn't been bothered any?
A. I think that the season we had last year if them oats hadn't been damaged any, I think that I ought to have made 150 bushels of oats. I have *a* had oats on this land before the smoke effected us, and I have had fine oats.
Q. —. How high did it grow?
A. About shoulder high.
Q. 21. How did it do then?
A. I had been away and came home, and after I came up I said to the boys——
Q. —. Just tell what you did?
A. I saw that the oats looked reasonably well out there, and I said we ought to have enough oats on the land——
Q. 23. Just tell what you saw?

A. Well, sir, the smoke come in there, and a little later
268 I went out into the oats and I saw that there wasn't no oats on the land to amount to anything; I found the plant lying on the ground dead, burned brown and dead, and there wasn't any oats left there to make anything.

Q. 24. Had you seen any smoke in there previous to that?

A. The smoke was in there when I come home on the 23rd of May, and it was a little later that I discovered that it was dying.

Q. 25. When you saw that smoke in there, state whether or not you smelled it?

A. Yes sir.

Q. 26. Did you observe any smoke in *on* your garden truck?

A. Yes sir.

Q. 27. What effect did it have on that?

A. It injured our beans, cabbage and our potatoes. We had a very fine irish potato patch; we cultivated *it* that very nicely and fertilized it, and we didn't get any potatoes at all off of it.

Q. 28. What were the visible effects of the tops of the potatoes?

A. *29.* The first I saw was that the leaves begun to crisp up around the edges and turn black and then from that they turned yellow, and drop off, and leave the stem standing.

Q. 29. Was that caused by bugs?

A. The- was no bugs.

Q. 30. You saw the smoke in there and smelt it?

A. Yes sir.

Q. 31. Did you have any corn crop?

A. Yes sir, I had one field of about thirteen acres, and one of five. Fourteen or fifteen acres.

Q. 32. Was that or not on specially prepared ground and on extra good land?

A. We had one piece of five acres in the piece; we estimated that pretty closely, and by that we could tell what was in the piece. I guess about four acres in that piece and on that we put 28 wagon loads of manure and 1,300 pounds of fertilizer. We got 100 bushels of courn off of that and we prepared it for 50 bushels to the acre.

Q. 33. What effect did the smoke have on that corn?

A. When that smoke come in there, I saw the corn turn white,
269 and I went and examined the roots; thought may be worms had got into it, but I couldn't find anything at all wrong with the roots. The tops of the blades turned white, and begun to die. We went on into it and some of it looked a little better, and we decided that maybe it would grow out, and we would wait until the next week; then we went back, and dug up about 100 of the stalks and replanted it. Practically the entire five acres had to be replanted.

Q. 34. What percent of that first pla-ting was killed—I mean by these fumes?

A. I think at least 60% of it was killed.

Q. 35. That that it didn't kill and left standing, did that make good corn?

A. It never did; it made a tolerable fair stalk, but it didn't never

make any ears to amount to anything; the replant that was not injured by the smoke made a pretty fair ear, but it didn't mature.

Q. 36. That cut off by frost?

A. Yes sir.

Q. 37. Any other of your garden truck hurt by the smoke, I believe you spoke of the irish potatoes?

A. Yes sir, our beans were scorched up and turned white and were injured, and our cornfield beans and garden beans and peas didn't raise at all.

Q. 38. Why?

A. Because the smoke ruins them every year.

Q. 39. The forest timber, did you observe any smoke in that? if so what was the effect?

A. I noticed that every year the forest is effected by the smoke; the leaves brown up, and they have this year. I could have brought specimens showing the effect on the foliage.

Q. 40. Has any of the timber been killed?

A. Yes sir, a great deal of the timber on my place is dead and dying.

Q. 41. Do you see those burnt leaves every year?

A. Yes sir.

Q. 42. When the smoke is in there you see it?

A. Yes sir. I don't think it's over ten miles from my place to the plants, air course.

Q. 43. How about this year, have you seen any smoke in there this year?

A. Yes sir, it has been in there pretty heavy, this year.

Q. 44. Tell what it has injured this year in the way of
270 garden truck, farm crops and timber, if you have observed this?

A. Yes sir, this year it has effected the timber and growth of it, and the foliage, and as for corn in the Spring, part of it first come up. One acre my boy planted for a prize acre, and that was badly damaged, and we had to go and replant like we did last year on account of the smoke killing it. The corn that was damaged was that which came up first and was young and tender.

Q. 45. Have you observed the manner in which it kills the corn, and whether or not that is similar to frost?

A. Yes sir, I have observed it. The smoke will kill one stalk in a hill and leave the other, and you will find the same to be true about frost; frost will kill one stalk in the hill and leave the other.

Q. 46. Do you know why that is true?

A. No sir, I do not.

Q. 47. What else did it hurt this year?

A. It hurt our potatoes, and it hurt my fruit trees.

Q. 47. How does it effect the fruit trees?

A. The first I noticed it in there, it would turn the leaf a little brown like, and the leaves begin to cup up around the edges, and turn white, later brown and then yellow and they drop off, and the apples, a large percent of them drop off; some of them drop off from worms but all of them on the ground are not worm apples.

Q. 48. If you haven't described the conditions of the forest this year, please do so?

A. I have brought some samples showing the effect on the foliage this year.

Q. 49. Tell how it is?

A. It scorches the leaves and they turn brown and then yellow, a great many of them.

Q. 50. Have you observed what kinds of the forest trees it effects the worst?

A. I don't know that I could say positively about that which it effects the worst. The hickory is practically gone from our place.

Q. 51. What killed it?

A. I can't see anything else except this smoke. It was there a few years ago, and now it's gone.

271 Q. 52. Have you traveled over these forests?

A. In that community, I have.

Q. 53. I will ask you if the hickory in that community is not practically gone?

A. Yes sir, it is practically gone.

Q. 53. State whether or not that used to be a fine county for hickory?

A. There used to be a great deal of hickory in the county, there isn't now.

It is agreed by and between counsel for the State and the defendant, that the witness lives 13½ miles from Copperhill, and 15½ miles from Isabella, in a Southeast direction.

Cross-examination by General FOWLER:

Q. 1. Did I understand you to say that the smoke killed that corn, that prize corn last year?

A. Yes sir.

Q. 2. And you replanted it, and the frost killed the replant before it matured?

A. Yes sir.

Q. 3. How long have you lived at that place?

A. Since I moved there about nineteen years ago. I owned the farm all the while, but four years I lived in Morgantown, but operated the farm just the same.

Q. 4. You go very frequently to Copperhill and Isabella?

A. I have been there a few times, yes sir. I was there this summer. I hadn't been there in two years until this summer.

Q. 5. Crops were injured pretty badly in 1913?

A. Yes sir.

Q. 6. That is the year, you try to, raise that prize corn?

A. Yes sir.

Q. 7. That is the year that your neighbor *made a* produced the prize acre of corn in the whole state of Georgia, isn't it?

A. Yes sir, I was in his corn.

Q. 8. Did you ever see as fine corn as that grown anywhere?

A. No sir, I don't know that I ever did.

Q. 9. How near was that to you?

A. On adjoining land; from my home it is about a mile or a little over.

272 Q. 10. He had a mighty good irish potato patch, didn't he?

A. Yes sir, he had a fine irish potato patch, but I would say that the whole crop was injured by the smoke; I was in there a number of times, and I think if it had not been injured, it would have produced more.

Q. 11. Do you suppose that his competitors, the South Georgia crops, were injured by the smoke?

A. I don't know about that.

Mr. DRAKE: We except to that because not irrelevant; and because South Georgia not being upland was not competing with us. Exception overruled. Appeal prayed and granted.

Q. 12. Is there any upland in South Georgia at all, no hills?

A. You will find some places that they call hills; we don't call them hills.

Q. 13. Over how great a territory in this State did that contest extend?

A. I don't know; over the State, I suppose.

Q. 14. Did you put in any claim for damages last year?

A. Yes sir.

Q. 15. How much did you get?

A. I got $30.00.

Q. 16. Have you put in any claim this year?

A. No sir.

Q. 17. Are you going to file one?

A. No sir, the requirements are too close. They want me to file my claim fifteen days after the smoke comes in on us and I can't tell what the damage is or would be in fifteen days.

Q. 18. Isn't it a fact that the arbitrators, that is the parties on that board of award go and examine the property?

A. All I can say that I was not at home. They went down, two of them went to my place after the crop was gathered and went and talked with my wife, but they couldn't tell anything about it.

Q. 19. But now, during the present year, aren't they going around at the present time?

A. I don't know anything about it.

Q. 20. To ascertain what the damages are?

A. I don't know.

Mr. DRAKE: I except to the evidence as being irrelevant. Exception overruled. Appeal prayed and granted.

273 Q. 21. You were speaking about the rules, the present rules how do you know that is the rule?

A. I see it in the papers, is all I know.

Q. 22. Didn't they also state that they would be around after the application was filed?

A. I don't know anything about that.

Mr. DRAKE: I further except to it as hearsay. Exception overruled. Appeal prayed and granted.

Q. 23. Did your claim include damages for all the previous years?
A. No sir, just for the year they was in.
Q. 24. Was there any smoke in there in 1912?
A. Yes sir.
Q. 25. During what part of the year?
A. During different parts of the year.
Q. 26. Was it as bad as it was in 1913?
A. I can't say positively; similar to it.
Q. 27. Did you have smoke in 1911?
A. Yes sir, we have smoke every year.
Q. 28. In 1910?
A. Yes sir.
Q. 29. In 1909?
A. Yes sir. It has been in there ever since they have been running the mines, more or less.
Q. 30. Those mines have been running for fifty or sixty years, haven't they?
A. I can't say; they have since I have been in there.
Q. 31. When did you first notice damage there on your place?
A. I can't tell exactly what year it was, but a number of years ago.
Q. 32. Six years?
A. Yes sir.
Q. 33. Seven years?
A. Yes sir.
Q. 34. Eight years?
A. I think, six, seven or eight years.
Q. 35. 1906, 1907 and 1908, that what you mean?
A. Yes sir, I think that was the years.
Q. 36. Anyway it was after that high stack was put up by the Tennessee Copper Company, wasn't it?
A. I don't remember about how soon after that, but it was after that.
Q. 37. Do you remember when that high stack was put up?
274 A. I don't know how many years it has been.
Q. 38. Don't you know that your troubles began after that high stack went up?
A. I can't tell you what year it went up? I don't know but it has been a number of years.
Q. 40. During these years that you have mentioned, 1906, 1907 and 1908, wasn't your country worst effected?
A. Yes sir.
Q. 41. You don't see anything like that now?
A. No sir, not quite so heavy.
Q. 42. Nothing like as heavy?
A. No, it is not as heavy.
Q. 43. Now you notice over there some patches of brown?
A. I can find it whenever I go into the forest.

Q. 44. When you go through the forest now, now and then you see some brown, isn't that true?

A. Yes sir; it's not as heavy as it has been.

Q. 45. Not near so heavy?

A. No sir: I said, not as heavy.

Q. 46. Really, there is no comparison between conditions now and in 1906, 1907 and 1908?

A. I can't say "no comparison"; I say that it is not as great.

Q. 47. In these years you have mentioned, haven't you seen the whole foliage right here in Blue Ridge burned?

A. Yes sir.

Q. 48. During those seasons?

A. Yes sir, and I saw it at home that way too.

Q. 49. The forests down there were in that condition?

A. Yes sir.

Q. 50. You don't see it that way now, do you?

A. Not so heavily.

Q. 51. That is, in going through the woods you can now and then pick out a tree that has burned leaves on it?

A. You can pick them out; they are scattered all through the woods, but not as heavy as they were six, seven and eight years ago; on the foliage of the timber you will find where it is specked and burned.

Q. 52. You don't find much leaves falling during the summer season, do you?

A. No, not many leaves falling.

275 Q. 53. Do you know when these acid plants went into effect?

A. Practically; I don't know the dates.

Q. 54. Don't you know that ever since then conditions have been better?

A. Out in my country it still hurts.

Q. 55. Conditions are not near so bad, are they?

A. No- so bad, of course.

Q. 56. Isn't it a fact that you are trying to attribute to these furnaces every bit of damage that you see to the forests all over this country?

A. No sir; I tell you what I do; I find the very same thing nearer the mines, and of course at home I find the same thing that I see nearer to the mines; that is why I think that it is the smoke.

Q. 57. Do you see dead trees through the woods there at your place?

A. Yes sir.

Q. 58. Do you know what killed them?

A. I don't say I know; but I attribute it to the smoke largely.

Q. 59. Don't you attribute the death of every dead tree you see to that smoke?

A. No sir, and I never did.

Q. 60. Have you any chestnuts over there?

A. No sir, they have all been dead for several years; I never did have many chestnut trees on my place.

Q. 61. I believe you say that the hickories are in bad condition?
A. Yes sir, they are practically gone.
Q. 62. Don't you know that both the hickories and chestnuts have been dying throughout the Southern mountains for a number of years?
A. I haven't been over the mountains.
Q. 63. If the chestnuts are dying elsewhere in larger quantities than in your section, you can't account for that?
A. I don't know anything about that; I haven't been in other sections.
Q. 64. You know absolutely nothing about the diseases of trees?
A. I don't know like a man that has studied it more thoroughly than I have.
Q. 65. Do you know the effects and causes which produce the death of trees?
A. Worms sometimes destroy the timber, and other dis-
276 eases I suppose kills the timber.
Q. 66. You do know that the fung-us disease effects the roots of the trees and destroys them?
A. No sir, I don't know that.
Q. 67. You don't really know that there is such a disease?
A. No sir, except in fruit trees; I have found that it effects fruit trees.
Q. 68. Do you know the scale in fruit trees?
A. Yes sir.
Q. 69. Did you ever see it?
A. Yes sir.
Q. 70. How much of it is in your orchard?
A. I haven't any.
Q. 71. How do you know?
A. I have investigated it.
Q. 72. Do you know enough about the scale to give that opinion?
A. Yes sir, I think so. I have been into orchards where it was, and knew that it was the scale.
Q. 73. Where did you read up on the scale?
A. I have studied fruit trees some ten or twelve years? I have studied some.
Q. 75. How many trees have you?
A. About a thousand.
Q. 76. How old are they?
A. Nine and ten years old.
Q. 77. Have you ever gotten any fruit from them?
A. I have.
Q. 78. Get a good crop?
A. No sir, not what I would call a good crop.
Q. 89. What varieties are they?
A. They are winter fruit?
Q. 90. Do they bloom early?
A. Not any earlier than the others.
Q. 91. Don't you know that late apples bloom earlier than any other apples?

A. They bloom practically the same as other apples.

Q. 92. Don't you know that the early apple blooms late and the late apple blooms very much earlier?

A. There is not much difference that I have ever noticed.

Q. 93. Don't you know that the late apples were killed by the frost?

A. It does if frost comes late enough for it.

Q. 94. You do have late frosts in your section?

A. Sometimes all of our fruit is killed by the frost.

Q. 95. During the present year, you had a late Spring didn't you, and as a matter of fact didn't you have a cold season?

277 A. I wasn't here until the 26th of May.

Q. 96. Didn't you have a very late frost?

A. I don't know sir.

Q. 97. Don't you know, as a matter of fact that it killed a very large part of the fruit throughout the North Georgia region, in the mountains of Georgia, and destroyed the peach crops down in middle Georgia;

A. No sir, I don't know that; I was in South Georgia.

Q. 98. When were you in Ducktown last?

A. In July.

Q. 99. You testified about oats, I believe that you have quit raising oats?

A. Yes sir.

Q. 100. Did you ever raise many oats?

A. Yes sir.

Q. 101. Spring oats or winter oats?

A. Spring oats.

Q. 102. Did you ever sow any winter oats?

A. No sir, not in this country.

Q. 103. Don't you know that in the Southern countries in many sections, they can't raise Spring oats at all scarcely, and that they sow winter oats?

A. No sir, I know that you can't raise Spring oats.

Q. 104. Don't you know that these same conditions exist fifty and one hundred miles and two hundred miles away from here?

A. No sir. I know that they raise them in South Georgia.

Q. 105. Don't they raise winter oats through there?

A. I know that they sow oats through there.

Q. 106. Isn't this true, that there are new diseased attacking the fruit trees and the forest trees in every locality, just like new diseases attack man?

A. I suppose so, I don't know.

Q. 107. You don't know it to be a fact that there has been a disease for the last few years in the Appalachian region which has been attacking the chestnut trees?

A. No sir, I haven't heard it.

Q. 108. And killing them from the root?

A. No sir, I haven't been interested in chestnut timber.

Q. 109. Also that the pine and the hemlock has been dying all over the country?

A. No sir. There is none in our section. There is a little
278 along the river. I haven't give it no attention and I don't know anything about these sections.

Q. 110. How much did you claim last year?

A. One hundred and fifty six dollars and a few cents.

Q. 111. And the Board of Arbitrators allowed you $30.00.

A. Yes sir.

Redirect examination by Mr. DRAKE:

Q. 1. Isn't it true that the Board of Arbitrators only have so much money to divide out among the people?

A. I reckon that they do; that's all I got.

Q. 2. You were asked about Spring oats and winter oats, I will ask you whether or not before this smoke came in there you could or not raise very fine Spring oats?

A. Yes sir. Before that smoke come in I would get 150 and 175 bushels on the farm there, and was only running a one-horse crop.

Q. 3. Speaking about the conditions of the forest, all you know of last year is what you saw in your own neighborhood, I believe you stated?

A. Yes sir.

Q. 4. You haven't seen the section of the country South and Southwest of these plants in Fannin County?

A. No sir.

Q. 5. You live North and almost East, north a little from Blue Ridge?

A. Nearly East; a little bit to the North.

Q. 6. What direction from the Ducktown Copper Company and the Tennessee Copper Company?

A. We call it North East.

Q. 7. I believe you stated that it didn't effect all sections alike; only in spots?

A. Yes sir.

Recross-examination by General FOWLER:

Q. 1. Did you ever saw any winter oats at all?

A. I did when I lived in Union County: I haven't since I have been in Fannin County.

279 Q. 2. How long has that been?

A. Forty years.

Mileage of witness: 16 Miles.

W. M. BAILEY, being sworn to speak the truth, the whole truth and nothing but the truth, testified?

Direct examination by Mr. DRAKE:

Q. 1. How old are you Mr. Bailey?

A. Sixty years old.

Q. 2. Where do you live?

A. I live in Gilmer County.
Q. 3. At what point?
A. At what is called Board Town Creek.
Q. 4. How far from Blue Ridge and in what direction?
A. Six miles from Blue Ridge, in a kinder West direction from Blue Ridge.
Q. 5. What part of Board Town, near the headwaters?
A. No sir, my place is in the fork of the creek.
Q. 6. Near Burnett?
A. Yes sir.
Q. 7. How near to Burnett and what direction?
A. It is about half a mile South of Burnett, or three-quarters.

It is agreed by and between counsel for the State and for the defendant, that the witness lives 12½ miles from Copperhill, and 15¼ miles from Isabella, in a direction a little West of South.

Q. 8. How long have you been living in that neighborhood on the present place?
A. Eight years.
Q. 9. How much land do you own in there in that community?
A. One hundred and Forty Acres.
Q. 10. Have you observed any sulphur smoke in that community in the last few years, and if so to what extent?
A. Yes sir.
Q. 11. What is the effect of that smoke when it comes in there?
A. It has an effect kinder like frost on the vegetables and oats and such like that, and peas. It burns the leaves.
Q. 12. After they turn what do they do then, the leaves?
280 A. They begin to dry up.
Q. 13. After they dry up do they hang or what do they do?
A. No sir, they fall off.
Q. 14. Have you seen anything like that this year; if so, when?
A. Yes sir, I remember that it come on the second day of June, and there were several there in the community said that it was the strongest——
Q. 15. Just tell what you know yourself?
A. It was the strongest I ever saw over there.
Q. 16. That this year?
A. Yes sir.
Q. 17. Did you observe any of the effects of that smoke after it was gone?
A. Yes sir.
Q. 18. What were they?
A. I have a large apple orchard; the apples begun to fall off.
Q. 19. What about the leaves?
A. They turned yellow, a kind of brown and then begun to shed off.
Q. 20. What else did you observe the effect on?
A. Beans and garden vegetables.
Q. 21. What did it do to them?
A. They dried up; turned white and dried up.

Q. 22. Did you smell that smoke?
A. Sure did, yes sir.
Q. 23. Did you observe the effect of it on your peas?
A. I did. It is worse on peas and oats and garden vegetables that is tender than on anything else.
Q. 24. Did you observe the effect of it on your oats?
A. I ain't growed any oats in six years; I can't raise them any more.
Q. 25. Did you use to grow them?
A. Yes sir, I growed as fine oats as anybody in the community.
Q. 26. Have you observed the effects of this smoke on your corn?
A. Yes sir.
Q. 27. What did it do to that?
A. When the corn is little it will turn it white like it has
281 been frost bit. A good deal of it did bloom again and seemed to revive and go on.
Q. 28. When it grows bigger, later on, when it is tasseling and silking, what will it do to it?
A. Say that the smoke comes in there today and then you go there tomorrow, the silks is dying up and drop off and the corn don't do no good.
Q. 29. Have you observed the effects on the forest timber?
A. Yes, sir.
Q. 30. What were those effects?
A. They turn brown, the leaves I think turn brown.
Q. 31. Did you observe any of that this year?
A. Yes, sir.
Q. 32. To what extent through the forest?
A. I don't believe that it has been as bad this season on the forest drying up the leaves, as it has heretofore.
Q. 33. What varieties of trees does it effect?
A. The Spanish Oak and the Post Oak trees.
Q. 34. It effects them worse?
A. Yes, sir.
Q. 35. State whether or not it effects most of the varieties?
A. Certainly; it browns the leaves of all the timber more or less; some of the places where it comes through and hits it center on the side of the mountains, it browns the leaves on all of the timber.
Q. 36. Have you observed anything of that kind this year?
A. Yes, sir, back there West of where I live, there is a place up there where the ground is pretty well covered with the leaves that has fell off.
Q. 37. That is not the natural time of the year for the leaves to fall off?
A. No, sir.
Q. 38. Did you observe the effects of the smoke last year?
A. Yes, sir, it has been there every year for the last eight years.
Q. 39. How long have you been living in this county?
A. I was born and raised in this county.
Q. 40. Where did you live before you went to this particular place?

282 A. In this county?
Q. 41. At what point?
A. I lived kindly east of here.
Q. 42. How far?
A. Six miles, back on the Tocoa river.

Cross-examination by General FOWLER:

Q. 1. Were you over in there in 1906?
A. Yes, sir, I reckon so, I moved there in January.
Q. 2. Eight years ago last January?
A. Yes, sir.
Q. 3. It was pretty bad wasn't it, the first year you went there, in 1906?
A. I don't remember. We have been having it, more or less of it every year. I didn't keep no dates.
Q. 4. Don't you remember that in 1906, 1907 and 1908, the first three years you were over there, that it scorched the whole hillsides, and scorched the forest?
A. I suppose it did, yes, sir.
Q. 5. It was a great deal worse those years than it is now wasn't it?
A. Well, I don't know, I believe that last year there was portions of my section that it scorched pretty bad.
Q. 6. Haven't you been over the Blue Ridge?
A. Yes, sir.
Q. 7. Wasn't it scorched pretty badly then?
A. Yes, sir.
Q. 8. You don't see anything like that now, do you?
A. Some places you see the effects of it.
Q. 9. I know you do in some places, but at that time wasn't it much worse?
A. Yes, sir, it was pretty much everywhere.
Q. 10. Now, traveling the forest you just see a patch here and there?
A. Yes, sir, kinder in spots.
Q. 11. You can go for great stretches and not notice anything at all, except that you will find a patch here and there that is effected?
A. No, where I live there is a gap back up in there, and when it comes in through that gap it will settle down all over Bush Head Mountain.
Q. —. Those are the places that are effected?
A. Yes, sir, at this time. I notice on my place there the leaves are browned considerable.
283 Q. 13. I say you can go for big stretches of the country through the forests elsewhere and wouldn't notice it?
A. There is some places back in behind the mountains that it don't strike down.
Q. 14. Don't you know, Mr. Bailey, that there are vast stretches of forest in the mountains that you never notice it?

A. Well, I tell you, the people have kinder got used to it and don't pay much attention to it like they used to. I don't pay as much attention to it as I did. I might travel all over the country and not pay any attention to it.

Q. 15. You came to Blue Ridge this morning?

A. Yes, sir.

Q. 16. How far did you come?

A. Six miles.

Q. 17. You came through sections of the country and never noticed it at all?

A. I don't know whether I would notice it or not. I said there was more or less of it everywhere, and we don't notice it like we did when it first come in there.

Q. 18. That section of land in there is naturally poor isn't it?

A. We make a living on it.

Q. —. It is very poor land though isn't it?

A. We have got a good deal that is poor.

Q. 20. There is really very little fertile land in that whole section?

A. Of course there is not a great amount of land for cultivation in that community, but there is some good land.

Q. 21. How long has that land been cleared?

A. I don't know, for a number of years though.

Q. 22. The strength of that soil is largely exhausted isn't it?

A. Not altogether. The smoke has ruined it; that's the trouble.

Q. 23. It has ruined the soil?

A. Yes, sir.

Q. 24. It has ruined the very soil?

A. Yes, sir, it has injured the soil. We can clear off new ground and we can't make nothing on it without fertiliz- it.

Q. 25. Do you mean to say that you can clear up fresh land and that you have got to fertilize that?

284 A. Yes, sir, to get anything off of it.

Q. 26. So it will kill the fresh land?

A. It will kill the soil.

Q. 27. You don't know how that is done, though, the trees are alive and standing there aren't they?

A. A good deal of the trees is down.

Q. 28. I say, still standing there?

A. Yes, sir, and a heap of them is down.

Q. 29. Some dead and some living?

A. Yes, sir.

Q. 30. And when you cut them off, then you have got to fertilize that soil?

A. That's right, sir; that's exactly what I said.

Q. 31. And that is on account of the smoke?

A. I can't say that it is altogether on account of the smoke. Maybe poor land might have something to do with it. The most expert farmers in our county claims that it is ruined by it.

Q. 32. That is incompetent evidence, and you knew it very well, didn't you?

Mr. DRAKE: I except to the argument with the witness; and I think it was called for any way, and I don't think that the witness knew the rules of evidence.

General FOWLER: We think that this court can strike out anything, and I move that it be stricken out.

Mr. DRAKE: I appeal from the move. Appeal granted.

Q. 33. Anyway, you- land won't raise oats; it takes pretty good land to raise oats, don't it?

A. Yes, sir, and we used to raise good oats.

Q. 34. That was before the land was worn out, wasn't it?

A. Well, our land ain't worn out. We put fertilizer on it, and we grow stuff on it.

Q. 35. This year, was the smoke in there in the forests as bad aheretofore?

A. No, sir, I don't think that it was.

Q. 36. Did you file a claim last year before this board of arbitrators?

A. No, sir.

Q. 37. Have you one this year?

A. Yes, sir.

285 Q. 38. How much damage are you claiming?

A. I disremember.

Q. 29. Don't you recall how much you are asking for?

A. No, sir, I disremember.

Q. 30. Two Hundred dollars?

A. I can't say, I disremember.

Q. 31. When did you file it?

A. I believe it was in June, I am not positive about that.

Q. 32. Can't you give us some idea about how much you think you are damaged this year?

A. Just this yea-?

Q. 33. You filed damages for this year, didn't you?

A. Yes, sir.

Q. 34. Your claim include- what?

A. Four years back.

Q. 35. Who are your attorneys representing you in that matter?

A. I don't know them.

Q. 36. Is it Evans, Spence and Moore of Atlanta?

A. Yes, sir.

Q. 37. Anyway, you don't remember how much you claim that you are damaged this year?

A. Well, sir, I didn't file just for one year; it is for four years back. I am claiming damages for more than one year.

Q. 38. Really, what you contemplate is the bringing of a suit and not a claim before this board of arbitrators—have you got a claim in before this board of arbitrators?

A. I don't know who the arbitrators is.

Mileage of witness: 12 miles.

G. M. PANHORST, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. How old are you, and where do you live?
A. I am thirty-one years old, and I have lived at Copperhill for the past ten years.
Q. 2. What is your occupation?
A. I am chief clerk for the Tennessee Copper Company.
Q. 3. Do you now say that you were in that same employment in 1913?
A. I was.
Q. 4. Do you know at what time in 1913, if the Tennessee Copper Company closed down, at what time they closed?
286 A. They did; they closed on the morning of May 4th, 1913.
Q. 5. When did they resume operations?
A. We went to smelting in the furnaces on May 16th, 1913.
Q. 6. Between May 4th and May 16th, 1913, was the Tennessee Copper Company operating any furnaces?
A. They were not, as far as I know.
Q. 7. Were you there?
A. I was and would have known it if they had been running. We blew in one small furnace on May 16th.
Q. 8. You say that they blew in one small furnace on the 16th, when did they blow in all the furnaces in May, or do you know?
A. We blew in all the furnaces the next morning.
Q. 9. Coming down to 1914, if the Tennessee Copper Company closed down, when was it?
A. They closed at six A. M. June 23rd.
Q. 10. When did they resume operations in 1914?
A. One furnace at four P. M. July 6th.
Q. 11. When was the next one blown in?
A. On the 7th of July at nine A. M.
Q. 12. Between June 23rd, when they closed down and July 6th, was the Tennessee Copper Company operating any green ore furnaces?
A. They were not.
Q. 14. Were they operating anything that created sulphurous fumes or smokes during that time?
A. No, sir.
Q. 15. They were not doing any smelting during that time?
A. No, sir.

Cross-examination by General FOWLER:

Q. 1. Didn't the Ducktown Company also shut down their furnaces this year?
A. I understand that they did; definitely, I don't know, I wasn't there.
Q. 2. Do you remember the plants which they were not operating?

A. I don't know definitely.

Q. 3. Don't you know that they were not operating on the 30th of June of this year?

A. No, I don't know that that is a fact.

Q. 4. Don't you recall that they blew in on the first or second of July?

A. I don't know the dates definitely at all; I understand they hadn't been operating.

287 Q. 5. Couldn't you tell from the appearance?

A. I wasn't around their plant at all; you see they are three or four miles from the Tennessee Copper Company's plant.

Q. 6. Didn't they also shut down in 1913?

A. I don't know.

Q. 7. You spend nearly all your time around the furnaces?

A. I have been in the office of the Tennessee Copper Company for ten years.

Q. 8. You go into the plant from time to time?

A. Yes, sir.

Q. 9. You know the odor of the smoke?

A. Yes, sir.

Q. 10. You know the odor of the smoke from the acid plants in there?

A. Yes, sir.

Q. 11. Do you know the difference between the odor of the smoke when the acid is not extracted from that where it has been extracted, that is, before the acid plants were installed, you smelled the smoke——

A. Yes, sir.

Q. 12. You have been there since they were installed and have smelt the smoke also?

A. Yes, sir.

Q. 13. State whether or not the extracting of the acid from the smoke, makes any difference in the odor?

Mr. DRAKE: We except to the question for the reason that there are no facts stated to justify any such question, and besides there is no evidence that the sulphuric acid has been extracted from the smoke. Exception overruled. Appeal prayed and granted.

A. Well, I don't know. I haven't been on top of the acid plant where any of the fumes would be left to be able to state definitely.

Q. 14. Well, did you detect any difference in the odor of the smoke, the sulphur smell, since they have been extracting the acid?

A. Well, sir, it has not been as noticeable right at the plant.

Q. 15. It has an odor since the acid has been extracted?

A. I can't say definitely whether it has or not.

Q. 16. You have been there so much that you don't pay any attention to it?

A. I didn't pay any attention to it really.

288 Q. 17. Were you there from 1906, 1907 and 1908 on up to the present time?

A. Yes sir.

Q. 18. Do you know what the conditions were so far as vegetation is concerned in that vicinity around Copperhill?

A. Yes sir.

Q. 19. State whether or not you have traveled from time to time up in North Georgia?

A. Yes sir, I have, to Blue Ridge, Chestnut Gap and Mineral Bluff.

Q. 20. How often do you visit Blue Ridge?

A. Maybe once a month; sometimes less.

Q. 21. During the summer season?

A. I have no stated periods. I have been here during all seasons.

Q. 22. During these various trips, were you also up about Mineral Bluff during the growing season?

A. Yes sir; more especially for the last few years.

Q. 23. What were the conditions through this North Georgia section during 1906, 1907 and 1908, just after this high stack was erected?

A. You could notice it, but I don't know much about it, but you could notice the effects.

Q. 24. State whether or not you could see vast stretches of forest, before the acid plants were put in, which were apparently scorched?

A. I never saw any whole stretches of forests that were burned.

Q. 25. You have seen trees and patches of the forests brown?

A. Yes sir.

Q. 26. How does it compare now with before these acid plants were put in?

A. Last year there was no comparison between the growth of the vegetation both locally and as far out as I have been, at Blue Ridge and around here.

Q. 27. No comparison, what do you mean?

A. Everything is a whole lot better than I ever saw it before.

Q. 28. State whether or not there are some fine gardens right in Copperhill?

A. There are some good gardens.

Q. 29. And splendid corn fields?

A. There is some good corn, especially right across the
289 river from the smelter.

Q. 30. How far is that?

A. I can't say definitely; it can't be over a quarter of a mile.

Q. 31. In your judgment is it over a quarter of a mile?

A. No sir.

Q. 32. They grow all kinds of vegetables in those gardens?

A. I have seen good beans and peas and corn.

Q. 33. And tomatoes?

A. Yes sir.

Q. 34. Everything that they ordinarily grow in gardens?

A. Yes sir.

Q. 35. Have you seen any gardens in Copperhill this present year that appear to have been effected by the smoke?

A. No sir.

Q. 36. Have you been around Isabella?

A. Not very much.

Q. 37. You don't know the conditions there?

A. No sir; I have just been around there on a buggy ride and that wouldn't give me a chance to see the conditions there.

Q. 38. Have you been over about Epworth and Chestnut Gap and through that Section there, this year?

A. Yes sir.

Q. 39. What called you there?

A. I was just driving around with my wife in the machine.

Q. 40. Good automobile road around through there?

A. Yes sir, around through Gravely Gap there into Blue Ridge.

Q. 41. What are the conditions of the forest and the vegetation through there?

A. Look good to me.

Q. 42. When were you last through there?

A. I was through Epworth, I think approximately six weeks ago.

Q. 43. Did you notice any effects, any apparent effects of the sulphur fumes through that whole stretch of country?

A. I did not.

Q. 44. Do you know whether or not you would have seen it had it been there?

A. I would think so. Driving along I would look into a man's field and everything looked fine to me.

Q. 45. State whether or not during the present season you
290 have been through many miles of the forests in Georgia, passing along the roads?

A. I don't know how many miles, *but* I have passed along but I have been from Copperhill to Gravely Gap, and then into Blue Ridge, twelve miles, make that circle, I suppose about eighteen or twenty miles.

Q. 46. Have you not also been up on the Blue Ridge?

A. Yes sir.

Q. 47. How far is that?

A. Twelve and a half miles.

Q. 48. Been to Mineral Bluff?

A. Yes sir, I said that I would come from Copperhill through Gravely Gap into Blue Ridge, and back to Copperhill by way of Mineral Bluff.

Q. 49. How often have you been over that route?

A. I guess half a dozen times.

Q. 50. Have you ever noticed anything to indicate that these forests were in an abnormal condition?

A. I have not.

Q. 51. Did they or not look perfectly green?

A. They did to me.

Q. 52. How were the garden crops along the route, so far as you noticed?

A. They looked good.

Redirect examination by Mr. DRAKE:

Q. 1. You folks that live there in Copperhill where there is not a vestige of timber, most any kind of timber looks good to you, don't it?

A. Might be; still I have been out quite a lot.

Q. 2. Where is Gravely Gap?

A. Between here and Copperhill. I think Gravely Gap is out there at the cross-roads.

Q. 3. In coming to Blue Ridge from Copperhill you come through that gap?

A. Yes sir.

Q. 4. You haven't been West of Epworth have you, up on Fightin' Town Creek, up in that country?

A. Yes sir, I have been up there; I was up there about five weeks ago, I should say.

Q. 5. How far up that way?

A. I don't know the mileage.

Q. 6. Do you know what points you went through?

A. Yes sir, I went through Madola to Pearceville.

Q. 7. Over about mine No. 20?

A. Yes sir, still further away from Copperhill than mine
291 No. 20.

Q. 8. Which way, about South from mine 20, is Pearceville?

A. Almost, I should say.

Q. 9. You were asked about a fine cornfield growing there in about a quarter of a mile of the Tennessee Copper Company's plant?

A. Yes sir.

Q. 10. I will ask you if the Tennessee Copper Company's plant is not up on a high hill above that corn field?

A. Yes sir, the Tennessee plant is, I should say, on an elevation of 75 feet above that ground.

Q. 11. And the stack is about 325 feet high?

A. Yes sir.

Q. 12. And the fumes from that plant would come out into the air four hundred feet above that corn?

A. Yes sir.

Q. 13. And naturally if the wind was blowing, it would go over that cornfield?

A. In some cases it would and in some it wouldn't. I have seen the smoke from that stack, when the atmosphere was heavy come almost down on the plant.

Q. 14. But under ordinary conditions, it would blow away?

A. That would depend on the atmospheric conditions.

Q. 15. Has the building of that high stack benefited the country?

A. Conditions are better than they were, but whether that is due to the acid plant or the high stack, I don't know; but I would say the acid plant, rather than the high stack.

Q. 16. You don't know, do you?
A. I don't know either way.
Q. 17. If it is a fact that 10 and 20 miles away from there where there wasn't any damage before, and after the high stack was built, the smoke come in there and killed the timber absolutely dead, that would make you think the other way, wouldn't it?
A. That would be a conclusion.
Q. 18. You didn't find any green corn patch at Isabella,—how far is that away?
A. Approximately three and a half or four miles.
Q. 19. You are not a botanist, or timber man or etymologist or anything like that?
A. No sir.

292 Recross-examination by General FOWLER:

Q. 1. Isn't there one of the finest groves of oak timber you ever saw, right there at Epworth?
A. It's a fine grove.
Q. 2. Have you seen that this year?
A. I have.
Q. 4. When did you see it?
A. Five weeks ago, approximately.
Q. 5. Did you observe anything whatever wrong with that grove this year; how did it look?
A. It looks good.
Q. 6. Wasn't there a drouth of about six weeks around Copperhill and through this section?
A. There was at Copperhill, and I prsume in this section.
Q. 7. Wasn't that one of the worst drouths you have ever known for that season?
A. Yes sir.
Q. 8. Do you remember that the drouth was broken on the 4th of July; that the drouth ended at that time?
A. It did rain on the 4th of July, and I believe that was the first rain we had in some six or eight weeks.
Q. 9. How far is it from Copperhill to Epworth?
A. I think three to four miles.
Q. 10. You stated, Mr. Panhorst, that you have seen that smoke drop practically on the ground?
A. I have.
Q. 11. Sometimes wouldn't it cover the ground for a mile around the stack?
A. Well, I don't know how far it would go that way, because I never paid any attention to it. I do know that it will come up around the office there, the plant and the residences, there.
Q. 12. Sometimes it will float for half a mile and then drop? You have noticed that, haven't you?
A. I never noticed that particularly, but it will do that; I have seen it once or twice; I don't know how often.

Mileage of witness: 24 miles.

L. C. ALLEN, being sworn to speak the truth, the whole truth, and nothing but the truth, testified:

Direct examination by Mr. HILL:

293 Q. 1. How old are you Mr. Allen?

A. Seventy-eight years old day before yesterday, the 12th day of this month.

Q. 2. ——.

—. I live five miles from here on Jack River, over near Morgantown.

Q. 3. What is that neighborhood known as?

A. I don't know that it has any particular name. I am a mile and a half South of Morgantown. I live on E. W. Chastain's farm on Jack river.

Q. 4. How long have you been living there?

A. About thirty years.

Q. 5. Have you ever been around the Ducktown plant or the Tennessee Copper Company's plant?

A. Many a time.

Q. 6. Did you ever smell that smoke?

A. Yes sir.

Q. 7. Have you ever seen any smoke similar to that on your place?

A. Yes sir.

Q. 8. How many times?

A. I can't tell you; too numerous to mention.

Q. 9. Can you see it?

A. Yes sir, and smell it and taste it; you can taste it sometimes.

Q. 10. What does it smell like?

A. Sulphur.

Q. 11. Are you a farmer?

A. Yes sir, and have been all my life.

Q. 12. What do you raise over there?

A. We raise corn, small grain and vegetables of all kinds.

Q. 13. Did you ever notice your crops immediately after that smoke had been down on them?

A. Yes sir.

Q. 14. What condition would they be in?

A. They would turn a dark color; it blacks the shucks on the corn, and sometimes it kills the fodder; it did this year.

Q. 15. Did you see it this year, the smoke?

A. As bad in July and June as it's ever been.

Q. 16. Do you know about the timber around in your section—the woods?

A. In my section there is a lot of the timber dead and dying; there is no growth, and I don't think there has been no growth in the forest for the last several years.

Q. 17. Can you name any particular dates this year that
294 you saw the smoke in there?

A. Yes, I have got it down. I set it down in the almanac; I set it down as it come in there.

Q. 18. Give us those dates, please?

A. I will give it to you in a minute; it damages my fruit mightily, my peaches——

Q. 19. Tell us about that?

A. They are a little over half gone; they are right black; it blacks it and rots it. I have got a peach in my pocket, and I can show you how it looks when that smoke settles on it. This is an Elberta; they have rotted, nearly all this year. Now I will give you the dates. The first, second and third of July and fourth of July, and especially the second and third of July was the heaviest smoke I ever seen in there.

Q. 20. What dates?

A. The second and third of July.

Q. 21. Which days was it in there?

A. All four days, but the 2nd and 3rd of July was the heaviest smoke I ever seen.

Q. 22. Where were you on those dates?

A. I was at home, where I am every day.

Q. 23. That is where you saw the smoke, at home?

A. Yes sir.

Q. 24. Where was it, in your crops, in the woods or where?

A. To give you an idea of it; I am down there, and it's over twelve miles on a direct line from my house to Copperhill, and I live right there near the river, and when the smoke comes in there it strikes me right square, and when the heavy smoke comes in there I am right in the face of it. I have seen it so thick through there that you couldn't tell a man from a woman four hundred yards away.

Cross-examination by General FOWLER:

Q. 1. Let me see your almanac?

A. There is two marks down in there. You will find some marks in there in June that don't represent smoke. I will show you the dates it was in there.

Q. 2. Tell me why one don't represent smoke?

A. These here dates represent smoke (indicating) that
295 is in June; now here on the 14th, that don't represent smoke; I am going to indict a man for his misconduct.

Q. 3. You have brought that almanac here with you?

A. Yes sir. I keep that by my desk, and when it's a smoky day, I set down a smoky day.

Q. 4. That is the way you kept books of the smoke, is on this almanac?

A. Yes sir, the days that smoke was in there.

Q. 5. And also the days you are going to indict some fellow?

A. Yes sir, when they do something they ought to be indicted for, I mark it so that I can indict them and give the date.

Q. 6. Do you indict a fellow every month or two?

A. No sir.

Q. 7. Two or three every month?

A. No sir.

Q. 8. How many — you indict during the month of June?
A. Only one; he stripped off before my grand-daughter.
Q. 9. Haven't you got two dates marked here to indict some fellow in June?
A. No sir, the dates with the cross marks is the days smoke was there.
Q. 10. What date did you mark to indict some fellow in June?
A. That's July.
Q. 11. Haven't you got a date to indict somebody in June too?
A. No sir.
Q. 12. What is that, the 10th and 11th? (Indicating.)
A. That's smoke.
Q. 13. That's a different kind of mark there, what is that? (Indicating)
A. I expect my little daughter marked that; I don't know what that means.
Q. 14. Now, have you got marked up on this almanac, every day that smoke was in there?
A. No sir, I have it when it was bad. I marked it when it was bad.
Q. 15. Was it bad on June 4th.
A. Yes sir.
Q. 16. Bad on that date?
A. Yes sir.
Q. 17. Well, was it bad on June 13th.
A. I reckon so.
Q. 18. Was it bad on June 20th?
A. It was heavy when I marked it.
Q. 19. Was it bad on the 20th of June?
A. Is it marked?
296 Q. 20. I am asking you, was it bad on the 20th of June?
A. I can't recollect; I have got it marked there.
Q. 21. You haven't any recollection at all independent of these little marks?
A. Yes sir, the smoke was in there the days it is marked.
Q. 22. How was it on the 26th of June?
A. I don't recollect the dates? I set it down in there when it was bad.
Q. 23. About how long would it be 'tween times?
A. I can't tell you that, them dates I marked there is the only way I can tell you.
Q. 24. Was there any days in the month when the smoke was not there?
A. I don't know.
Q. 25. What is your best judgment?
A. My judgment is that when the wind set from the Northwest that it brings the smoke in there.
Q. 26. What is your best judgment as to whether there was any week without smoke?
A. This is the first time I was ever brought in this business.

Q. 27. I am asking you about the smoke?
A. There ain't no use trying to cross me and catch me.
Q. 28. How was it on the 24th of July?
A. The 24th, 25th and 26th the smoke was pretty heavy.
Q. 29. It was on those dates?
A. Yes sir.
Q. 30. How was it on the 24th, 25th and 26th days of June?
A. I don't recollect that.
Q. 31. You haven't any recollection at all about it?
A. I haven't any recollection about them dates.
Q. 32. Who else been marking on this thing besides yourself?
A. Nobody, but myself.
Q. 33. You said a while ago that your daughter might have marked on it?
A. I said she might have made that mark.
Q. 34. Did you make those opposite the 10th and 11th?
A. I made a cross mark there.
Q. 35. She has been marking on it as well as you have?
A. She might have done it; I didn't do this here.
297 Q. 36. What is this writing here?
A. I told you while ago that a man stripped in the presence of my grand-daughter that date and I am going to indict him.
Q. 37. Any been there in August?
A. I reckon there has.
Q. 38. What do, you think about it?
A. That's all I have got marked; that smoke struck my vines I know that.
Q. 39. What kind of days were the second and third of July?
A. I can't answer that.
Q. 40. What day of the week was the second and third of July?
A. Tell me what day the month come in on and I'll tell you.
Q. 41. I am not telling you anything; I am asking you?
A. There's the almanac, it will tell you.
Q. 42. Was there any smoke in there in April?
A. I don't recollect.
Q. 43. You can't tell anything about that at all; I see you have marked April here, does that mean anything?
A. No sir.
Q. 44. Was there any smoke in April?
A. I have only got two months marked.
Q. 45. Was there any smoke in May?
A. I never marked any of the smoke except in June and July.
Q. 46. You didn't mark any of the smoke in May?
A. See if you can find any.
Q. 47. You didn't mark any in May. Just July and June?
A. June and July is all I recollect.
Q. 48. Was there any smoke in there in May?
A. I reckon there was, but it wasn't heavy.
Q. 49. What have you got a cross mark here opposite the 13th in May, why did you mark it if there wasn't anything?

A. Whatever I have got marked; let me see (Looks at almanac) Yes sir, that is smoke that day.

Q. 50. What are these other marks here the 21, and 22nd, that smoke?

A. Yes sir, and the 28th.

Q. 51. Isn't it a fact that you have kept everything on that book, and don't know what is smoke and what is not smoke?

298 A. Yes I do; if you want to know what that is, this 28th, that is the day a man done some big swearing.

Q. 52. Are you going to indict him for it?

A. Would you let a man swear in the presence of your women folks and not indict him for it?

Q. 53. So you are going to indict a man in May for swearing in the presence of your women folks?

A. I guess so.

Q. 54. Isn't it a fact that when you want to jot down anything you go and make a cross mark opposite that day in your almanac, isn't that so; every time you want to make a note of anything you go and take your almanac and make a cross mark?

A. Yes sir.

Q. 55. Every time a fellow swears you put it down?

A. I set this down, the day and the month so I wouldn't forget it.

Q. 56. You really don't know what some of those cross marks mean, do you?

A. Yes sir, I know what every one of them means.

Q. 57. How big a farm have you?

A. Is that necessary?

Q. 58. It's not necessary, but I am entitled to an answer.

A. I really don't know the number of acres.

Q. 59. Well, one hundred and sixty?

A. I don't know whether it is one hundred and sixty or not. I own a part of three lots.

Q. 60. How much cleared land?

A. Seventy five acres.

Q. 61. How long has it been cleared?

A. Good many years; I have been living on it for thirty years.

Q. 62. Pretty poor land?

A. No- so overly poor.

Q. 63. You can't make much of a crop on it?

A. We make enough to live on, sir.

Q. 64. You can't make much oats on it?

A. We don't try.

Q. 65. You have an orchard up there?

A. Yes sir.

Q. 66. Raise apples?

A. Apples, peaches, plums and pears.

Q. 67. How much have you been damaged this year; how much do you claim?

A. I can't tell you exactly; I don't recollect what the claim was that I made.

299 Q. 68. When did you put your claim in?

A. I can't tell you exactly. When the men was around looking; one from Knoxville and one from Georgia.

Q. 69. How long ago was it?
A. It was in May, I reckon.
Q. 70. Do you remember how much it was?
A. No sir, I don't recollect.
Q. 71. Two hundred and fifty dollars?
A. No sir, not that much.
Q. 72. One Hundred Dollars?
A. I reckon about One Hundred Dollars.
Q. 73. Did you have in a claim last year?
A. Yes sir.
Q. 74. How much?
A. I got ninety dollars.
Q. 75. How much did you put in for?
A. I don't recollect.
Q. 76. Three or four times that much wasn't it?
A. No sir, not three or four times; I didn't put in no big thing; I put in what I thought I was really damaged.
Q. 77. How many years did you put in for last year, just one year or three or four years?
A. I reckon it was for three years.
Q. 78. And you got Ninety Dollars for three years?
A. I don't recollect exactly. I don't want anything only just what is right. If they will just keep that smoke off of me I will never ask them for a cent.

It is agreed by and between counsel for the State and the defendant that witness lives thirteen miles from Copperhill and fourteen and a half miles from Isabella, and Southeast from Isabella; air line.

T. R. HARKINS, Sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. HILL:

Q. 1. How old are you?
A. Forty-two years old.
Q. 2. Where do you live?
A. In the West end of Fannin.
Q. 3. Near what point?
A. Near Jack River.
Q. 4. What is the settlement name?
A. Jack River.
300 Q. 5. What is your post office?
A. Oasis.
Q. 6. How far from the plant of the Tennessee Copper Co.?
A. I can't answer that question correctly.
Q. 7. How long have you been living there?
A. Thirteen years.
Q. 8. You a farmer?
A. Yes sir.
Q. 9. What do you raise there?
A. Corn and potatoes and such like; vegetables.

Q. 10. Have you ever been up around Isabella or Copperhill?
A. Yes sir.
Q. 11. Did you ever see and smell the smoke up there?
A. Yes sir.
Q. 12. Have you ever seen any smoke around your place there?
A. Yes sir.
Q. 13. Does it or not smell like the smoke you smelt at Isabella and Copperhill?
A. Yes sir, so far as I can tell it does.
Q. 14. About how often do you see that smoke at your home place, and for how long have you been seeing it?
A. I have been noticing it there for several years; I can't say how often.
Q. 15. Which direction are you from the plants?
A. Little West of south.
Q. 16. What wind brings it to you?
A. The Northeast wind.
Q. 17. What is the condition of your crops, Mr. Harkins?
A. Reasonably well this year.
Q. 18. Have you ever noticed it any time when the smoke would come down on your crops?
A. Yes sir.
Q. 19. Have you ever noticed them shortly afterwards?
A. Yes sir.
Q. 20. What was their condition then?
A. Changed to some extent.
Q. 21. What would be the appearance of them?
A. The most smoke damage I noticed was done to my vegetables.
Q. 22. Describe their appearance?
A. It kinder wilts the stuff; and browns the timber and a great deal of it dries up.
Q. 23. Have you ever noticed the condition of the timber there on the sides of the mountain?
A. This year?
Q. 24. Last year?
A. Yes sir.
Q. 25. What was that condition?
A. Very bad this year on this side.
301 Q. 26. Have you ever seen smoke in those woods?
A. Yes sir.
Q. 27. Did you ever examine the timber afterwards?
A. I simply taken notice to it.
Q. 28. What was the condition after the smoke had been in there?
A. It changed all the timber in June, and that specially noted by me was in the white pine.
Q. 29. What was the condition of that?
A. It changed its color; kinder wilted it down and changed the color of the leaves to a certain extent and the leaves died later on.
Q. 30. What would you say was the condition of that side of the mountain?

A. The West side or the East?
Q. 31. The side towards the plants?
A. In very bad condition.
Q. 32. How long have they been in that condition?
A. I am not able to state for certain; I haven't been there to look.
Q. 33. That this year and last year?
A. Yes sir.
Q. 34. What mountain is that?
A. The Blue Ridge; I noticed it coming out yesterday.
Q. 35. Have you ever noticed Barnes mountain?
A. Yes sir, that is the mountain I spoke of.
Q. 36. That a part of the Blue Ridge?
A. Yes sir.
Q. 37. Do you live anywhere near Flat Top?
A. Yes sir.
Q. 38. Have you noticed all of these mountains through there, Flat Top, Barnes and Blue Ridge?
A. Not this year; I was up there last year.
Q. 39. What was the condition last year?
A. I never noticed in particular.
Q. 40. I mean on Barnes and the Blue Ridge there?
A. I don't hardly think it was as bad last year as it is this year.
Q. 41. Many of the leaves burned this year?
A. Yes sir.
Q. 42. About what percentage, if you know?
A. I don't know that I could answer that.
Q. 43. Many of them burned?
A. Yes sir a great deal; a good per cent of them anyway.
302 Q. 44. Do you remember when a party came there to your place to investigate for the copper company?
A. Yes, sir.
Q. 45. Did they camp on Jack river?
A. Last year?
Q. 46. At any time?
A. Last year?
Q. 47. Did you see them last year?
A. Yes sir.
Q. 48. Did they come to your house?
A. Yes sir, I believe that some of them came to my house.
Q. 49. Did Mr. Sherman Reese come to your house?
A. Yes sir, I know him, but I don't remember that Mr. Reese was at my house. There was a party come by there one day and possibly Mr. Reese was in the crowd. They passed my house very often while at work.
Q. 50. Did you talk with them?
A. Yes sir.
Q. 51. What were they doing?
A. I can't say.
Q. 52. What did they tell you they were doing?
A. The told me, I believe, that they were estimating the damage to the timber.

Q. 53. I will ask you to state whether or not you showed them any damage?

A. I can't say that I directly showed them any damage, but I spoke of the damage.

Q. 54. You told them about the damage?

A. I told Mr. Reese about the damage on this side, but he didn't go, I believe on that side. This wasn't the time that they camped out there.

Q. 55. I will ask you to state whether or not at that time you told Mr. J. A. Miller or anybody else that there was no damage?

A. No sir, I never told them that.

Q. 56. I believe you stated that you told them there was damage there?

A. Yes sir, before this.

Q. 57. Do you remember any dates on which damage was done last year?

A. Yes sir, I think I do.

Q. 58. Give us a date, if you can remember it?

A. May 12, I saw smoke, and I saw the damage afterwards when I was on Flat Top.

303 Q. 59. Did you see any smoke on that date?

A. Yes sir; I saw it come out from the basin.

Q. 60. You mean come out of the Ducktown basin?

A. Yes sir, towards my country there.

Q. 61. Could you see it and smell it?

A. Yes sir, I was up on the mountain and could see it come in and after I come down in the valley into the smoke I could smell it.

Q. 62. That last year, 1913?

A. Yes sir.

Q. 63. Did you have occasion to notice the timber after that?

A. Yes sir.

Q. 64. What was the appearance after that?

A. It discolored it.

Q. 65. Did you notice any change in the white pines at that time?

A. Yes sir.

Q. 66. What was the change?

A. It discolored it considerably. Some of it died, and I moved out some this Spring.

It is agreed by and between Counsel for the State and for the Defendant that the witness lives eleven and a half miles from Copperhill, and thirteen miles from Isabella, in a Southwesterly direction, air line.

Cross-examination by General FOWLER:

Q. 1. How long have you lived there?

A. Thirteen years.

Q. 2. How long has that smoke been coming down in there?

A. I am unable to state.

Q. 3. Five or six years?

A. Something like that; perhaps longer.
Q. 4. Can you remember the year it first came in there?
A. No sir, I am not able to state.
Q. 5. Wasn't it 1907 or 1908, seven or eight years ago?
A. I am not positive about that.
Q. 6. You think five or six years ago, possibly a little longer.
Q. 7. Yes sir, that, or longer than that.
304 Q. 8. For the first two or three years after it first began, the entire mountain was scorched pretty badly wasn't it?
A. Last year was our worst year that we have had; that is to say in my country.
Q. 9. Were you out of your immediate vicinity?
A. That was, in my immediate vicinity.
Q. 10. I am talking about the whole mountains taken together.
A. I haven't been over the mountains much this year; hardly any.
Q. 11. You don't know how they are this year?
A. Except I said a while ago, along on this side.
Q. 12. How much and what extent of the territory have you been over and know something about?
A. The road from Oasis leading to the mountain, about four miles.
Q. 13. Is that the extent of your knowledge?
A. Yes sir, where I have visited.
Q. 14. How far is that from Blue Ridge?
A. The nearest point in this direction I suppose is twelve miles, ten, eleven or twelve.
Q. 15. How did you come to Blue Ridge?
A. By Oasis.
Q. 16. Who came with you?
A. Mr. Brown.
Q. 17. You came through ten, eleven or twelve miles this morning?
A. Yes sir, something like that.
Q. 18. Aren't the forests between here and your place about as green as you ever saw them?
A. They are some greener this year; that is between here and Mr. Brown's.
Q. 19. Isn't it a fact that these mountain forests are in as healthy a condition as you ever saw them in your life?
A. I can't state to that effect positively.
Q. 20. They look green don't they?
A. When I first passed through them I never took no notice of that, and I can's state as to that.
Q. 21. Where were you raised over in that section?
A. No sir, I wasn't raised there.
Q. 22. Was there any damage over there in 1912?
A. Yes sir, there was some in there in 1912, I suppose;
305 there has been every summer for several years.
Q. 23. How much were you damaged in 1912?
A. I am not able to state that.

Q. 24. Two years ago?
A. I am not able to state that.
Q. 25. Don't you know what was damaged on your place two years ago?
A. I can't tell you to what extent.
Q. 26. You were looking for damage on your place?
A. No sir.
Q. 27. Have you filed a claim?
A. No sir.
Q. 28. You have for this year, haven't you?
A. No sir.
Q. 29. You are going to file it?
A. I can't say that I would.
Q. 30. You have the matter under consideration?
A. Yes sir.
Q. 31. What kind of crops did you have in 1912 and 1913?
A. In 1913, the crops wasn't so good.
Q. 32. How were they in 1912?
A. In 1912, I believe they were something like an average, as well as I remember at the present.
Q. 33. Do you know Mr. R. A. Shiflett?
A. Speaking of that Mr. Shiflett?
Q. 34. Yes?
A. Yes sir, I have met him.
Q. 35. Is that the same gentleman that camped up there on Jack's river?
A. Yes sir.
Q. 36. You have talked with him?
A. Yes sir.
Q. 37. Didn't you have a talk with him about the corn crops?
A. I can't state about the corn crops.
Q. 38. Didn't you tell him that the corn crops hadn't been damaged?
A. No sir, I don't recollect that I did.
Q. 39. Do you know whether you did or not?
A. No sir, I had no talk with him about crops not being damaged.
Q. 40. Didn't you tell Mr. Shiflett when he was camping on Jack River that smoke never damaged anything in that country or section of the country?
A. No sir, I did not.
Q. 41. You swear positively that you didn't make that
306 statement to Mr. Shiflett at that time?
A. Yes sir, positively. Mr. Shiflett and me had a conversation about the damage.
Q. 42. What did you tell him?
A. It come up in this way. Mr. Shiflett seeing my crops there, and he was asking me about the locations of certain property, and he offered me a proposition to work for him, and I told Mr. Shiflett I wasn't the man. I never went into details with him; he wanted me to work for him and I told him I wasn't the man; I

thought I understood the matter and what he wanted me to do, and I told him I wasn't the man. I saw other men at work.

Q. 43. What were the other men doing?

A. They were riding around there looking about over the timber I suppose, I *suppose, I* never traveled with them.

Q. 44. You didn't ride with them and look at the timber?

A. No sir; I told him I wasn't the man he wanted, and he asked me why, and I hold him that I claimed there was damage.

Q. 45. You swear that you told Mr. Shiflett that?

A. Yes sir, and I think I can be able to prove it?

Q. 46. By whom?

A. Mr. John Jones.

Q. 47. Any one present with you and Mr. Shiflett?

A. Yes, sir, several were around there, but I am not positive who all of them were.

Q. 48. Mr. Sherman Reese there?

A. Perhaps he was; I can't say that he was for sure.

Q. 49. Do you know what Mr. Shiflett was doing there at the time?

A. He was seeking out that timber at that time.

Q. 50. Don't you know it to be a fact that you told Mr. Shiflett that there never was any damage in that community, and that he then asked you to go to Chattanooga through the country and look over that section of the country, and that you told him that you didn't want to be a witness; that the other fellows had been trying to get you for a witness for them, and that you had refused to testify, and that you didn't want to be a witness at all?

307 A. No sir, I think you misunderstood, if you understood me to say I told him there was no damage; I didn't tell him that.

Q. 51. He did try to get you to go to Chattanooga to look over these lands, didn't he?

A. No sir, he never mentioned Chattanooga to me to look the timber over.

Q. 52. He did ask you to go to Chattanooga to be a witness?

A. He rather led up to that point; he give me to understand that he wanted me to go.

Q. 53. After you told him what you knew about it, didn't he tell you that he wanted you to go to Chattanooga?

A. Yes, sir, but that was before I told him that I claimed that there was damage.

Q. 54. Didn't you tell him that the other parties had been trying to get you to testify for them, and that you had refused to do it?

A. I told him that the other parties had spoke to me about working for them, but I didn't want to do it; that I didn't want to be a witness for either party.

Q. 55. Who was the other party that was trying to get you to work for them?

A. Mr. Vestal there spoke to me.

Q. 56. Didn't Mr. Vestal have you come here?

A. Yes sir; this was after this time. I hired to Mr. Vestal to work for him, and he had me come here.
Q. 57. You have been working for Mr. Vestal since that time?
A. Yes sir.
Q. 58. When did you quit working for him?
A. I can't give you the dates; it was last fall.
Q. 59. How long did you work for him?
A. I can't give you the dates.
Q. 60. How much did Mr. Vestal pay you for your labor, so much per day?
A. Yes sir.
Q. 61. Has he paid you anything to come here and testify?
A. No sir.
Q. 62. Is he to pay you something for your day's work?
A. No- that I know of; he hasn't promised me anything.
308 Q. 53. You own any lands in that neighborhood?
A. Yes sir.
Q. 54. You own the land you live on?
A. Yes sir.
Q. 55. You are not on his land?
A. No sir.
Q. 56. Now in regard to this smoke in 1913, what time was it that you first remember it coming in there?
A. It was in May—May 12th; that is the only date I remember.
Q. 57. Had you seen it in there before that?
A. Yes sir, it was in there before that.
Q. 58. How often?
A. I can't state.
Q. 59. From the Early Spring?
A. Yes sir, all along.
Q. 60. On what date was it that you had that heavy frost over in there?
A. Well, I don't remember, right at present.
Q. 61. Wasn't it on the 10th and 11th of June?
A. Yes sir, something like that.
Q. 62. You had a heavy frost in that neighborhood?
A. I can't say a heavy frost; I saw a little out there on the fence one morning.
Q. 63. It was cold?
A. Yes sir.
Q. 64. Didn't it afterwards freeze?
A. Yes sir, to have frost it must have.
Q. 65. As a matter of fact didn't you see ice?
A. No sir, frost; if you call frost ice, I saw it.
Q 66. On the 9th it was very cold wasn't it?
A. What time?
Q. 67. The 9th of June, 1913.
A. I can't say.
Q. 68. Very cold for that season of the year?
A. Yes sir, I suppose it was, along about that time; I don't remember, particular.

Q. 69. Anyway, along about that time it was very cold?
A. It was rather a cold time.
Q. 70. Didn't it, just before this frost, didn't it freeze just the day before the frost?
A. What frost?
Q. 71. Wasn't there ice in that community?
A. Not that I know of.
309 Q. 72. And then it turned off next morning into a heavy frost?
A. No sir, not a heavy frost; I saw frost there one time as I stated, only at one place, and I went down to my field to see if it had done any damage, and couldn't find any; I saw a little frost.
Q. 73. Wasn't the vegetables killed from that frost?
A. Not extensively.
Q. 74. Just after the frost?
A. My garden right near it never; frost never bit my beans or anything.
Q. 75. In a few days after that, didn't you see the tops of the white pines with spots that had turned white?
A. I never saw them turn.
Q. 76. They were turned white?
A. There was before that a discoloration of the timber.
Q. 77. Did that arise from smoke, or do, you know?
A. I suppose that it did.
Q. 78. Which came in there earlier in the Spring?
A. Yes sir, I suppose so.
Q. 79. Anyway, you saw discolored timber before then?
A. Yes sir.
Q. 80. And then didn't you see additional discoloration a few days after that?
A. I never made no note of it.
Q. 81. Why make one note and not make another?
A. Circumstances might cause a man to remember things better than he would others, possibly.
Q 82. Did you make any note at all of anything that did happen; did you go any set anything down in a book or anything of that kind?
A. I can't say that I did; I might make a note in this way; make it a point to remember it.
Q. 83. You had seen the smoke drift in from the mines a hundred times, hadn't you?
A. I can't remember the number of times I saw it.
Q. 84. Did you make a note of any other times?
A. No sir, I can't say that I did, except the time I have told?
Q. 85. What was that?
A. The 12th of May.
Q. 86. That is the only time that you know that smoke was in there?
310 A. In particular, yes sir.
Q. 87. That the only time it ever drifted in on you?
A. No sir.

Q. 88. Did it drift in there the first part of May that year?
A. Yes sir, I suppose it did.
Q. 89. You made no note of that?
A. No sir; I can't say that I did.
Q. 90. Did it drift in there the first part of June that same year?
A. Yes sir, I think it was in there that month.
Q. 91. Was it in there every week?
A. I can say? I can't answer that.
Q. 2. Did you see it drift in there from time to time and din't make any note of it?
A. Yes sir. One time I saw it drift in from the mines is one of the times I made note of it.
Q. 93. What day of the week was it?
A. Monday.
Q. 94. What time of the day was it?
A. In the evening.
Q. 95. How late?
A. It was the latter part of the afternoon. I saw it come in there. I was on Flat Top that afternoon.
Q. 96. What were you doing on Flat Top?
A. I went up there to buy a cow, and that is how come me to take particular notice of the time. I wasn't to give any note for the cow, but was to remember that interest was to be due from that time.
Q. 97. Who did you buy the cow from?
A. Miles Watkins; that it how come me to remember this particular day.
Q. 98. How far could you see it from where you were?
A. I could see it all back in the basin over in that direction around the mines. Beyond the mines I couldn't see.
Q. 99. You don't know where that smoke came from, whether it come from the Power house or not?
A. Well, I could see the stack?
Q. 100. What stack could you see?
A. I could see the mines there; the stack of the mines.
Q. 101. You saw smoke coming from the stack at the mines?
A. Yes sir.
Q 102. And drifting in there from the stack at the mines?
A. Yes sir.
Q. 103. You say that the trees were burned on the mountain?
A. Yes sir.
311 Q. 104. Were the white pines burned or turned white before that?
A. No sir.
Q. 105. They turned white after the frost?
A. Right before the frost; they turned after this smoke come in there; shortly after.
Q. 106. Let's see, that was on the 10th and 11th of May?
A. June, wasn't it?
Q. 107. Are you swearing about May or June?
A. I am swearing about May; if you are talking about when the smoke come in there.

Q. 108. Any way, smoke had drifted in there before that?
A. Yes sir.
Q. 109. And the pines had turned before that?
A. I never noticed it before that time.
Q. 110. Will you swear that there wasn't any smoke in there on the 10th of May?
A. No sir, I won't say. I wouldn't swear that there wasn't any smoke in there at that time; I couldn't.

Redirect examination by Mr. HILL:

Q. 1. I will ask you whether or not evergreens turn white or change their color from the effects of cold?
A. I never did see it.
Q. 2. Is white pine an evergreen?
A. Yes sir, and I never did see it change color from frost.
Q. 3. Did you ever see frost turn it white or change its color?
A. No sir.
Q. 4. Did you ever look at Mr. Jones' timber?
A. Which Jones?
Q. 5. John Jones?
A. Yes sir.
Q. 6. What was the condition of that about the same time you were talking about?
A. I noticed from the road that the pines were discolored.
Q. 7. When was that?
A. The same time I spoke about.
Q. 8. Right after the 12th of May?
A. Yes sir.
Q. 9. You said something about something happening on the 12th of May, about buying a cow, what was it?
A. I bought the cow on that day, and was to pay interest on the money for the cow from that day.
312 Q. 10. You were coming home with the cow, you say?
A. Yes sir, I was coming back with the cow, driving it home, when I saw the smoke in the basin.
Q. 11. Where was it?
A. It was coming from the basin in there. I saw the stacks.
Q. 12. How many stacks did you see?
A. I don't know how many.
Q. 13. Did you see the plant?
A. I never noticed that. I only took notice like a man will naturally on anything like that. I charged my memory with that; I saw the smoke coming over that country there and settling down below me.
Q. 14. Could you or not smell that smoke after you got into it?
A. Yes sir, I could smell it after I got into it.

Recross-examination by General FOWLER:

Q. 1. You could see one big stack?
A. Yes sir, very plain.

Q. 2. You could see the smoke coming from there?
A. Yes sir.
Q. 3. Mr. Harkins, Mr. Vestal the gentleman you are working for is sitting here right now isn't he?
A. I am not working for him now.
Q. 4. The man you did work for?
A. Yes sir.
Q. 5. He is here suggesting to the attorneys what to ask you?
A. I can't hear what he says.
Q. 6. Haven't you seen him whispering to the attorney who is examining you?
A. Yes sir, I have noticed him talking there.

Mr. DRAKE: We except to the question and answer as being immaterial and irrelevant. Exception overruled. Appeal prayed and granted.

Redirect examination by Mr. DRAKE:

Q. 1. I believe you live just East of what mountain?
A. Cowpen, I believe.
Q. 2. Cowpen Mountain and Jack River?
A. Yes sir.

313 Recross-examination by General FOWLER:

Q. 2. As I understood you, you saw a big high stack?
A. Yes sir.
Q. 3. That stack in plain view from where you were, that high stack?
A. There wasn't any timber in the mountains and you could see it mighty plain that distance; I could see it all right.

Redirect examination by Mr. DRAKE:

Q. 1. You could plainly see smoke boiling up from that stack and then come over this way?
A. Yes sir.
Q. 2. From the stack?
A. Yes sir.

Mileage of witness: 36 miles.

J. J. TURNER, being sworn to speak the truth, the whole truth and nothing but the truth, testified?

Direct examination by Mr. DRAKE:

Q. 1. Where do you live Mr. Turner?
A. Mile on the other side of Morgantown on the river.
Q. 2. How old are you?
A. Fifty years old the 10th of last November.
Q. 3. How long have you been living there?
A. Two crops.

Q. 4. Where did you live before you went there?
A. Down here at Cherry Log.
Q. 5. Is Morgantown in Fannin County?
A. Yes sir.
Q. 6. What is your occupation?
A. Farming.

It is agreed by and between Counsel for the State and for the defendant that the witness lives seven and a half miles from Copperhill and Eight and a half miles from Isabella, in a Southeasterly direction, air line.

Q. 7. Do you own any land?
A. No sir, I do not.
Q. 8. What kind of crops do you raise?
A. I raise tolerable fair crops.
Q. 9. I mean what varieties, what kinds?
A. Corn, wheat, rye, potatoes, cabbage, beans and peas.
314 Q. 10. You say you have been on your present place two years, did you make a crop last year?
A. Yes sir.
Q. 11. Have you seen any sulphur smoke in there last year?
A. Yes sir; I saw it last year there.
Q. 12. What was the appearance of it?
A. It would come in there and bite my corn sorter like frost. When the corn was in silk it would kill the silk and the little roastin' ears.
Q. 13. Could you smell that smoke?
A. Yes sir, and you could taste it.
Q. 14. Speaking of last year what crops and garden truck did it injure for you?
A. My cabbage; last year it killed a lot of cabbage; I raised some afterwards, but the cabbage was little ones, and it hurt my beans pretty bad, my garden beans.
Q. 15. What effect did it have on the beans?
A. It comes down in there and the leaves turn yellow in a day or two and drops off, and does it sorter like frost.
Q. 16. Does it effect your fruit any?
A. Yes sir.
Q. —. How does it effect that?
A. The leaves just shrivel up and drop off.
Q. 18. Did you observe the effect on your corn?
A. Yes sir; you can see splotches on the blades of the corn; it would go plum- through the blades, and by fodder time we ain't got no fodder.
Q. 19. What effect will that have on the crop of corn?
A. It will strike the ear and rot it like it will the fodder; it will shrivel up and won't fill out.
Q. 20. Consequently can you make a fine crop of that stuff?
A. No sir, a man can't make no fine crop.
Q. 21. How much corn did you have in last year?
A. I don't know.
Q. 22. About how many acres?

A. I guess about,—I really can't tell you,—somewhere about thirty acres.

Q. 23. How much of the thirty acres was effected by this smoke?

315 A. It went all through; you can't tell how much it bit over.

Q. 24. Did it strike the whole patch?

A. Yes sir, the whole field was bit, but it was in patches; it would hurt two or three acres in a patch; and maybe it wouldn't hurt the next as bad.

Q. 25. What per cent of a crop did you make last year on account of that smoke?

A. I can't tell you.

Q. 26. Estimate it?

A. I can't hardly tell you how much damage it done. I expect over a hundred bushels of corn, outside of the fodder and beans and things in the field.

Q. 27. Any fruit on the place; apple trees?

A. Yes sir.

Q. 28. What effect would it have on the apple trees when it would hit them?

A. The leaves would wilter up and turn brown and drop off.

Q. 29. How soon after the smoke hits a patch before you can tell the effect?

A. Just a short time; just in a day or two they will wilter up just like frost hit it.

Q. 30. Coming down to this year, has there been any smoke in there?

A. Yes sir.

Q. 31. When did you first observe it?

A. It has been in there off and on all the year.

Q. 32. How have the winds been this year?

A. Mostly from the North.

Q. 33. More than usual?

A. Yes sir; they have been more from the North than generally.

Q. 34. In May did you have any smoke?

A. Yes sir, all through May.

Q. 35. Did it burn anything?

A. You could see a little corn turn yellow.

Q. 36. Did you have any in June?

A. Yes sir; 'long the first of June we had a right smart.

Q. 37. Can you give any dates?

A. No sir.

Q. 38. Any there in July?

A. Yes sir.

Q. 39. When did you notice any in July?

A. On the 3rd and 4th of July; then on up to the 4th and 5th. It comes in there on the 3rd. It come in there that day.

316 I was fixing to go to Copperhill. I saw it coming in there, and went in and eat my dinner and when I come back to catch my mules, you couldn't see down to the river.

Q. 40. How far was it to the river?

A. Half a mile.

Q. 41. How much was there?

A. It was thick like a big fog. My irish potatoes was right there at the barn, and some tomatoes, and they wilted right up. I left there about twelve o'clock and the next day I come back on the 4th.

Q. 42. Where did you go?

A. I went to Copperhill.

Q. 43. When you got there did you see any smoke coming from the Tennessee Copper Co.?

A. No sir, I didn't see none at all.

Q. 44. Did you see any smoke coming from any other direction?

A. Yes sir, back over there toward Ducktown it was boiling up, and come right across this way. I seen it and tasted it and smelled it all the way until I got up there.

Q. 45. Any of your crops that it has effected this year?

A. Yes sir my corn; it is all over the blades, and it is all over my crop of peas worse this year that I have ever saw it.

Q. 46. How much of a corn crop have you?

A. I don't know just how much. There is 60 or 70 acres in cultivation and there is right smart of it in corn.

Q. 47. Is all that corn effected?

A. There is places all over it that is effected. Some places don't look like the other. Maybe two or three acres *acres* it won't hurt, and then maybe tomorrow it will come down and hurt that.

Q. 48. Have an oat crop last year?

A. I never raised any.

Q. 49. Raise any this year?

A. No sir, there ain't any small grain this year on the whole farm.

Q. 59. How about the crop last year?

A. I never raised any last year.

Q. 60. The forests, how were they effected last year, did
317 you observe any smoke damage at all?

A. Yes sir, I believe last year was worse than this year.

Q. 61. How were the forests effected?

A. Looks like it has been bit down just like the other stuff it kills.

Q. 62. How do the leaves appear?

A. It looks like you had built a fire around it, pretty close to it, and the leaves was wilted from the fire.

Q. 63. That is the appearance of the forest?

A. Yes sir.

Q. 64. To what extent, or how much territory have you observed over there that has that appearance?

A. I ain't been out in the woods, but I have been in the fields and I have been around the other fellows there down in their plantations, and you can see right smart of effect. I haven't been up in the woods, but you can see it.

Q. 65. Do you mean by that that the leaves are discolored?

A. Yes sir, you can tell it way off yonder; it looks yellow.

Q. 66. Who was with you when you went to Copperhill?

A. Mr. Henry Smith.
Q. 67. He the gentleman that was here today and testified?
A. He is here; I reckon he has been in here.

Cross-examination by General FOWLER:

Q. 1. Whose land do you live on?
A. Dr. Chastain's.
Q. 2. How far from Morgantown?
A. About a mile; we claim it a mile.
Q. 3. You have been there two years?
A. Yes sir; made two crops.
Q. 4. Where did you move from there?
A. Cherry Log.
Q. 5. Whose land you on there?
A. I lived on Wedner's land part of the time; I stayed there two or three years, I suppose.
Q. 6. You don't own any land of your own?
A. No sir.
Q. 7. Did you ever own any?
A. Yes sir.
Q. 7. How long ago?
A. It has been twenty years.
Q. 8. Where was it?
A. Back on Board Town.
Q. 9. Did you receive anything for damages last year?
A. Yes sir, Mr. Chastain put in, I think, and he give me $5.75 or $6.75.
318 Q. 10. You got something last year?
A. He just give me that.
Q. 11. How much do you expect this year?
A. I ain't expecting anything.
Q. 12. Is Dr. Chastain going to put in any?
A. I don't know.
Q. 13. Ain't you going to try?
A. If I was, what little I would get wouldn't be worth a fellow's time fooling with it. What a fellow gets ain't nothing to what he is damaged.
Q. 14. If you are damaged so much why don't you get out and go somewhere else?
A. Because, I don't want to get out.

Mr. DRAKE: We except to the question and answer as irrelevant, and for the further reason that an American Citizen has a right to live wherever he pleases. Exception overruled. Appeal prayed and granted.

A. Yes sir, I have always lived where I pleased, and I am going to unless I am run out.
Q. 15. I am asking you the question, if you can't make any crops over there, why don't you go where you can make a crop?
A. Because I don't want to. We can raise anything we want to

there if it wasn't for that smoke, and we could *maise* it easy, and make it easier than you can most anywhere you go, but it looks like we are going to have to go whether we want to or not. I have traveled about a heap; I have been down in lot of the counties down below.

Q. 15. Out of Georgia?

A. Yes sir.

Q. 16. What states have you been in besides Georgia?

A. I have been in South Georgia.

Q. 17. What kind of land have you?

A. Pretty good land; as good average land as there are in this county.

Q. 18. How long has it been cleared?

A. I can't tell you that.

Q. 19. Do you know for how many years that land has been cleared?

A. No sir, but I suppose that it has been cleared for a long time.

Q. 20. It is worn out, isn't it.

A. No sir, it is as good average land as there are in Fannin
319 County; right along on that river there.

Q. 21. It is down on the river where you are?

A. Yes sir.

Q. 22. Where these fogs come down?

A. There ain't no logs come down.

Q. 23. I didn't say logs, I said fogs?

A. There ain't no fogs that hurts our stuff like this smoke.

Q. 24. What is the difference in appearance from these mountain fogs?

A. Sometimes it comes in there, and it smells mighty strong.

Q. 25. You can't tell the difference, can you?

A. You can tell a powerful difference when you can smell it and taste it.

Q. 26. Taste it?

A. Yes sir.

Q. 27. What does it taste like?

A. It tastes like, haven't you ever tasted this strong coal smoke on the trains?

Q. —. No, I don't eat coal?

A. If you have ever been around a train much you could taste it.

Q. 28. So you can taste this smoke?

A. Yes sir, you can taste that stuff.

Q. 29. You would know that smoke by the taste and the smell?

A. Yes sir; I know it whenever I smell it anywhere. I went to Rome, and passing down there there was some of that smoke and they was talking about it, and I says boys don't you know what that is; that's that old Copperhill Smoke, that's what it is."

Q. 30. And that was at Rome?

A. No sir, at Pine Log going to Rome.

Q. 31. That is in Pickens County.

A. Yes sir.

Q. 32. How far was that away?

A. Thirty or thirty-five miles.

Q. 33. So it is, you were way down in Pickens County on your way to Rome, and you smelled copper smoke?

A. Yes sir; it was there and I seed signs of it.

Q. 34. So it is, that down in Pickens County you saw signs of that smoke?

A. Yes sir; that smoke will go a hundred miles; it goes up and forward.

Q. 35. Didn't you see some of it in Rome?

A. No sir, I didn't.

Q. 37. Didn't smell it?

A. No sir, I never.

320 Q. 38. Didn't you think you did?

A. No sir, I never.

Q. 39. How far is it to Rome?

A. It's about 100 miles.

Q. 40. From what you say it would go there?

A. I suppose that it would.

Q. 41. Why didn't you smell it there?

A. Because I never smelled it.

Q. 42. Anyway you smelled it and saw its effects on the cotton in Pickens county, thirty-five miles away?

A. Yes sir; I seen that smoke right there on that cotton.

Q. 43. And you smelled the smoke?

A. Yes sir, it come right down there and settled in there.

Q. 44. Did you taste it in there?

A. I could smell it just like I smell it here, and I knowed it; you can breathe it and breathe it until you can taste it.

Q. 45. What was you doing when you smelled it down in Pickens?

A. I don't know that that's any of your business?

Q. 46. Tell me, whether it's my business or not?

A. I was going to Rome two or three years ago.

Q. 47. What month was it?

A. I don't know.

Q. 48. What season of the year was it?

A. It was the Fall season.

Q. 49. During the cotton season?

A. Yes sir, after the crops was laid by.

Q. 50. Three years ago?

A. I beleive it was year before last.

Q. 51. Two years ago, then?

A. Yes sir.

Q. 52. You were going to Rome and you smelled it?

A. Yes sir.

Q. 53. You are dead sure, as soon as you saw that cotton in Pickens County that it was exactly the same thing that you saw back there on your beans?

A. I saw the effect all right.

Q. 54. It was the same thing that you saw on your beans and potatoes and your corn, what you saw down there was the same thing

you had seen on your corn and your potatoes, and the timber around your place?

A. When I see smoke in one place and then see it in another I call it smoke, and it looked the same on the cotton as it would be here.

Q. 55. And you smelled the smoke there?

A. Yes sir; that cotton turned brown, and the smoke set-
321 tled down there, and I seed it was smoke and I knowed it and knowed what it was.

Q. 56. You say that has been in your place off and on this whole year, did you see it there in May?

A. Yes sir.

Q. 57. What dates?

A. I never kept no dates.

Q. 58. You can't tell a single date?

A. No sir, I never paid no attention to it; it was in there off and on all the time; a man working can't pay attention to dates; it's in there every time the wind is from the North.

Q. 59. Have any garden stuff bit in May?

A. Yes sir.

Q. 60. Scorch them?

A. Some time they would wilt down a little bit.

Q. 61. Did it, this year, scorch them?

A. Yes sir.

Q. 62. In there in June?

A. Yes sir, all along through June; along about the first of June.

Q. 63. Crisp up?

A. Yes sir.

Q. 64. Hurt them?

A. Yes sir.

Q. 65. Scorch your Irish potatoes?

A. Yes sir, the irish potatoes, nearly killed them.

Q. 66. Along in June?

A. Yes sir, along up in June.

Q. 67. The eighth and ninth of June?

A. I can't tell you.

Q. 68. Your irish potatoes were killed along up in June?

A. Some of them were; we planted at different times.

Q. 69. When did you plant your first irish potatoes?

A. I planted some potatoes in the full of the moon in March.

Q. 70. When did you plant your last ones?

A. I planted some along in April.

Q. 71. All of your potatoes up before June?

A. Some of them were up.

Q. 72. Wasn't all of them up?

A. Some of them were; I don't know whether they all were or not.

Q. 73. Does it take two months for potatoes to come up?

A. It's owing to the time you plant them.

322 Q. 74. Do you mean to say that any kind of potato wouldn't be up in that time?

A. You can plant some along the last of May, and they would come up in June.

Q. 75. How long does it take for potatoes to come up?

A. Two or three weeks; about two weeks generally; depends on the season, sorter.

Q. 76. So, all the potatoes you had were killed along the first of June?

A. They wasn't all killed, no sir.

Q. 77. But they were all scorched?

A. Scorched, but they wasn't all killed; sometimes it will scorch them, and they will come out and grow a while; it don't kill them all right down when it strikes them.

Q. 78. Did it scorch the woods all around there too, in June?

A. Yes sir, I could see signs of it in the woods there all along through June.

Q. 79. Did you see it in the middle of June?

A. I don't know whether it was or not; it was along in June.

Q. 80. You say it was there along in June, wasn't it in there the latter part of June?

A. I think that there was a space in there, along towards the end of June there wasn't much smoke?

Q. 81. Who told you that?

A. I know it; no man don't have to tell me. Any man with any sense can see it; and it comes in my field there.

Q. 82. Do you see everything that comes into your field?

A. No sir, I don't suppose that I have.

Q. 83. Then you say it come in there the first of July?

A. No sir, it come in there the third and fourth of July.

Q. 84. What day of the week was that?

A. I don't remember.

Q. 85. Wednesday?

A. No, I don t remember what day it was; it was the 3rd and 4th that it was in there.

Q. 86. And you can't tell what day of the week it was?

A. I don't know what day of the week it was.

Q. 87. Who told you the third and 4th of July, Mr. Vestal?

A. No sir he didn't.

323 Q. 88. Has Mr. Vestal been talking to you about this case; have you been talking with Mr. Vestal?

A. I spoke to Mr. Vestal a time or two.

Q. 89. When and where?

A. I spoke and he did.

Q. 90. Did you ever work for Mr. Vestal?

A. I barely know the man when I see him.

Q. 91. Now you said something about smoke coming in there the 3rd day of June, what time of day——

A. No sir, I never said it.

Q. 92. July?

A. Yes sir, on the 3rd of July.

Q. 93. What time of day was it?

A. About ten o'clock; along up in the morning about nine or ten o'clock.

Q. 94. Where were you?

A. I was at home.

Q. 95. You had caught your horses?

A. No sir, I hadn't; I went to feed my horses and then I eat dinner.

Q. 96. Prior to that time your garden had been bad bit, or about killed once or twice?

A. No sir, I said I saw the signs.

Q. 97. Didn't you swear a while ago that it had nearly killed all of your potatoes?

A. I said that it had scorched them. It will come in there and bite them, and then do it again, and maybe do it a dozen times, and then go on and you won't make but a few potatoes.

Q. 98. How long did you stay at home that day, the 3rd of July, after it come in there?

A. Until about eleven o'clock. I left home about eleven o'clock

Q. 99. And it come in there at ten o'clock?

A. Some time about ten or eleven o'clock.

Q. 100. And you left when?

A. Sometime about eleven or twelve o'clock.

Q. 101. And when you left, you left it in there?

A. Yes sir, it was in there when I left.

Q. 102. And you were gone until the next day?

A. Yes sir, I got back the next day.

Q. 103. On the fourth of July?

A. Yes sir.

324 Q. 104. You don't know the day of the week?

A. No sir.

Q. 105. Where had you been?

A. To Ducktown.

Q. 105. What were you doing there?

A. I went down with Mr. Henry Smith.

Q. 106. That the Mr. Smith that was in here this morning?

A. Yes sir.

Q. 107. And you didn't get back until the next day, what were you doing in Ducktown?

A. I hadn't been doing anything.

Q. 108. You didn't go in to celebrate or anything like that?

A. No sir; we started home the next morning early. There was a picnic there that day, but I didn't stay for that.

Q. 109. Was it in there 5th and sixth of July?

A. There was a few days that I didn't notice it; I noticed for several days that it was in there off and on, but I never paid no attention to it. I noticed that it was pretty like for a few days, and then I would see the smoke in there off and on.

Q. 110. Your crops were destroyed mostly before that?

A. I didn't say destroyed; I said they was hurt; that I had seen signs of it.

Q. 111. What do you mean by sign?

A. I seen smoke in there all along.
Q. 112. I am talking about in June?
A. I told you that I saw smoke all along in June.
Q. 113. You testified that it burnt your potatoes in June?
A. Yes sir, it scorches the potatoes and the woods every time it comes in there; and then it might come in tomorrow and scorch another place; maybe one place it wouldn't hurt today.
Q. 114. I believe you said that that smoke was in there on the 3rd day of June and that you left it in there?
A. I never said it. I said the 3rd day of July.
Q. 115. I mean the 3rd day of July; that smoke come in there about ten o'clock, and when you left it was still there?
A. Yes sir; I left about eleven or twelve o'clock.
Q. 116. I believe you said that it scorched your potatoes that time?
A. Yes sir the leaves, and the weeds, they was wilting be-
325 fore I left.
Q. 117. It hit hard, and they tumbled over right there?
A. Yes sir; it hurts when it hits.
Q. 118. You have seen the same thing done by frost, haven't you?
A. Yes sir.

Redirect examination by Mr. DRAKE:

Q. 1. You have been asked about fogs here in that river country and in the mountains, you don't have fogs on bright sun-shiny days, do you?
A. No sir.
Q. 2. You do have this smoke that looks like a fog when the sun is shining?
A. Yes sir.
Q 3. On the third day of July, was the sun shining?
A. Yes sir, I think it was clear.
Q. 4. The sun has a tendency to dispel the fogs and scatter them, don't it?
A. Yes sir.

Mileage of witness: 10 Miles.

W. M. BARNES, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. HILL:

Q. 1. How old are you Mr. Barnes?
A. I am about fifty-six.
Q. 2. Where do you live?
A. Right over towards Fightin' Town; towards the Blue Ridge Northwest from here, about t-elve miles.
Q. 3. Near what Post Office?
A. Oasis.
Q. 4. How long have you been living there Mr. Barnes?

A. All of my life, except I was away for seven years.
Q. 5. Do you farm there?
A. Yes sir, I have been over there over twenty years.
Q. 6. Do you know about the timber around in that section?
A. Yes sir.
Q. 7. Have you been around the Tennessee Copper Company plant and the Ducktown plant?
A. Yes sir.
326 Q. 8. Have you ever smelled that smoke over there?
A. Yes sir.
Q. 9. Have you ever seen that smoke around your place?
A. Yes sir.
Q. 10. Did it smell like the smoke at those plants?
A. Yes sir.
Q. 11. Like the smell of the smoke up around Ducktown?
A. Yes sir.
Q. 12. How many times have you seen it in there?
A. I couldn't tell you.
Q. 13. For how many years have you seen it in there?
A. For twenty years off and on.
Q. 14. Do you live near Barnes Mountain?
A. Right at the foot of what they call Barnes Mountain.
Q. 15. Have you seen the smoke on the mountain any time through there?
A. Yes sir.
Q. 16. State whether or not you have looked at the timber at any time right after the smoke had been in there?
A. Yes sir, a few days afterwards; after it comes I have looked, and you can see a little effect in two or three days.
Q. 17. How would it look?
A. There in some places it looked sorter like the frost had bit it; the leaves was parched and crisped, and some falling off.
Q. 18. Have you seen that smoke in there this year?
A. Pretty near every day through May.
Q. 19. Out in the section where the timber is too?
A. Yes sir.
Q. 20. State whether or not you have seen the leaves off the trees on the ground?
A. Yes sir.
Q. 21. Is this the time of the year for them to come off?
A. No sir.
Q. 22. What trees over there Mr. Barnes, what sort of the trees did you see effected that way?
A. Several different kinds of the oak; Spanish Oak; Post Oak; Black Oak; some few white pines and the locust.
Q. 23. Are all of the different varieties of the timber damaged or not?
A. Everything on the South side of the Mountain is damaged; everything without it was the locust; I don't know for certain whether that was damaged or not.

327 Q. 24. Did you notice the timber last year?
A. Yes, sir.
Q. 25. What was the condition of the timber last year?
A. On this mountain we are talking about, I didn't see so much in there.
Q. 26. What about over your section generally?
A. It was bad, but not as bad as it has been this year.
Q. 27. Do you raise and beans and peas and corn?
A. Yes, sir.
Q. 28. Have you ever seen any smoke on them?
A. Yes, sir.
Q. 29. Have you noticed them after the smoke left?
A. Yes, sir.
Q. 30. What effect does it have on them?
A. It burns the corn like frost bite.
Q. 31. Did it bite your corn this year?
A. Yes, sir; sometimes it kills the tassels all at once.
Q. 32. Have you seen the smoke in there at various times during this year?
A. Back in May, and along the first of June, it was in there pretty near all the time.
Q. 33. What about last year, 1913, do you remember any day that you saw it in there then?
A. I seen it where it killed the peas on the 12th of May, 1913.
Q. 34. How do you fix that day?
A. I put it down.
Q. 35. What caused you to put it down?
A. A gentleman asked me to go and see his garden, it was well fertilized; they wasn't doing so well, and he asked me what was the matter——
Q. 36. Just tell what you saw there?
A. I saw the peas was killed there.
Q. 37. Did you see any corn?
A. He had some corn, but I wasn't in the corn.
Q. 38. Whose garden was that?
A. Mr. John Vestal's.
Q. 39. That Mr. J. T. Vestal?
A. No, sir, his son.
Q. 40. You put that date down?
A. Yes, sir.
Q. 41. What was the appearance of the peas that you examined?
A. They was folded over and drooped over; kinder blackish and crimped up.
328 Q. 42. From your experience as a farmer and gardner, what do you think effected those peas?
A. Smoke; in fact I knowed it was.
Q. 43. Those field peas or garden peas?
A. Garden peas.
Q. 44. Going back to the timber, about what percentage of the timber around your place is damaged?

A. The timber there up on that mountain where I live, I think 50% of it is injured.
Q. 45. How about towards Higdon's store?
A. It was scorched, but not as bad as where I live.

It is agreed by and between counsel for the State and for the defendant that the witness lives eight and a half miles from Copperhill and ten and three-quarter-miles from Isabella.

Cross-examination by General FOWLER:

Q. 1. You live on the top of the mountain?
A. No, sir, to the left of it rather.
Q. 2. At the foot?
A. Yes, sir, at the foot.

Redirect examination by Mr. HILL:

Q. 1. From where you live there can you see the stacks of the plants?
A. You can from the mountain, a quarter of a mile walk up to the top from my house, you can see both.

Recross-examination by General FOWLER:

Q. 1. How long have you lived there?
A. I was born and raised within a mile of there, and have been living there for twenty years.
Q. 2. How long have you been seeing smoke in there?
A. For about twenty years.
Q. 3. Do you remember when they roasted the ore?
A. Yes, sir, I remember when they roasted the ore, but I don't remember the dates.
Q. 4. Did it come in there at that time?
A. Yes, sir, it come in some; I have seen about as much before as since.
329 Q. 5. Really, you haven't been damaged much in there until the last four or five years?
A. Yes, sir, we have been damaged longer than that.
Q. 6. Five or six years?
A. Longer than that, I can't say how much, but longer back than that.
Q. 7. In 1913, you had a very cold spell in June, didn't you?
A. No, sir, not at my house.
Q. 8. Didn't you about the 9th or 10th of June, have a frost?
A. No, sir, we never.
Q. 9. You swear that you didn't have a frost?
A. Not in my settlement.
Q. 10. Wasn't it very cold on the 9th of June?
A. Not where I live, nor in my settlement, I never seen any frost in my settlement in June in my life.
Q. 11. How much land do you own?

A. I own something like 1600 acres.
Q. 12. How much in cultivation?
A. I don't know.
Q. 13. How long have you owned that land?
A. Where I live, not more than eight years.
Q. 14. Got half of it in Cultivation?
A. No.
Q. 15. Thirty acres?
A. You mean in corn?
Q. 16. In everything?
A. I guess about twenty acres.
Q. 17. When was it cleared?
A. I can't tell you; it was cleared when I bought it, before I owned it.
Q. 18. That is worn out now and gone, isn't it?
A. No, sir, I manure it good.
Q. 19. You raise good crops of corn?
A. Reasonably good corn, by manuring and fertilizing it.
Q. —. What kind of land is it?
A. It is good upland, on the North side of the mountain.
Q. 20. What do you cultivate that upland in; corn?
A. Some of it.
Q. 21. How long has that been in cultivation?
A. Not very long.
Q. 22. That upland wears out pretty quickly doesn't it?
A. No, sir, not as much as you would think.
330 Q. 23. Have you been cultivating that mountain land every year?
A. No, sir; some of it every year, but I let it lay out.
Q. 24. Does the timber die from any other causes than smoke?
A. I can't tell.
Q. 25. Haven't you know- of timber dying in there before any smoke ever come in there?
A. I have known it to die, but not half as much timber; it naturally dies anywhere.
Q. 26. Do you know anything about the diseases of timber?
A. Not much.
Q. 27. You don't know that diseases of timber are developing every year?
A. No, sir, I don't know it. I know that since the smoke come in there that it has been a heap worse.
Q. 28. Don't you know and haven't you been where there is no smoke and found it worse than it is where you are?
A. No, sir.
Q. 29. You haven't been in many countries and look at the timber?
A. No, sir, not very many; about fourteen different states.
Q. 30. If you were to go to a place where they have more dead timber than you have in there—if you were to go where there was no smoke and should find more dead timber than you have in there, you of course wouldn't attribute that to smoke?

A. If there was any plants in there I would; I haven't never been to no place where there is more.

Q. 32. You have been lo-king for dead timber haven't you?

A. No sir, but a fellow can't help but see it.

Q. 33. When you were traveling, were you looking for timber?

A. No sir, but I would see it. I ain't never been in no country where there is as much dead timber as there is in this section.

Q. 34. Had it been cut over or not?

A. No sir.

Q. 35. What kind of timber is dead?

A. All kinds.

Q. 36. Dead oak?

A. Yes sir.

Q. 37. How many dead oak trees?

A. I couldn't tell you how many.

Q. 38. You have forest fires on your land?

A. No sir; no more than the leaves burn.

331 Q. 39. Don't the leaves burning, burn out the underbrush?

A. No sir; they don't burn until fall and that don't kill it.

Q. 40. Ever cut any of the timber off of your land?

A. Nothing only fire wood.

Q. 41. Cut it for sale?

A. Yes sir, several years ago.

Q. 42. Ever sell any of the timber?

A. Yes sir, a little to Mr. Vestal.

Q. 43. How much did you sell Mr. Vestal?

A. No- much.

Q. 44. He did cut that?

A. Yes sir, of course he cut what I sold him.

Q. 45. What kind did you sell him?

A. Some poplar and some oak.

Q. 46. How much did you sell him?

A. I don't remember just how much.

Q. 47. Did you sell any chestnut?

A. No sir.

Q. 48. Sell any white pine?

A. Nothing but poplar and a little oak.

Q. 49. How many years has that been?

A. I can't tell you.

Q. 50. Five or six years ago?

A. Longer than that; it has been over ten years.

Q. 51. He left the laps lying in the woods?

A. Sure.

Q. 52. Didn't that burn?

A. No, some of the cuts are in there yet; rotten.

Q. 53. Any fires gone through there since that?

A. There have on the South side; there haven't been any on the North side.

Q. 54. What is the reason?

A. I have never saw it dry enough, winter or summer.

Q. 55. Anyway, you don't know whether that timber died from smoke or disease?

A. Yes I do; I know that it's the smoke.

Q. 56. How do you know it?

A. From the looks of it after I seen it come in there.

Q. 57. That's all a guess isn't it?

A. No sir.

Q. 58. You saw the smoke there?

A. Yes sir, and I saw the dead leaves.

Q. 59. There was dead timber before there ever was any smoke in that country?

A. Yes sir; some dead timber.

Q. 60. That didn't die from the smoke?

A. That was before the smoke ever started.

332 Q. 61. And the smoke didn't kill that?

A. No sir, I reckon that died from natural causes.

Q. 62. What are the natural causes?

A. Worms, I suppose; I can't tell you.

Q. 62. Although you are willing to swear that all that died from the smoke?

A. No sir.

Q. 63. When a man points out a tree to you and you see that tree is dead, and you don't know what killed that tree, you think it is the smoke?

A, I have got to know if I say; if I don't see no leaves burned and no leaves falling off, I wouldn't know.

Q. 64. How do the worms effect a tree?

A. The worms don't cut it all at once.

Q. 65. The worms might have been working on the tree like the smoke; it takes several applications to kill the tree don't it?

A. That's owing to the health of the tree, and what kind of tree.

Q. 66. Don't you know that there are trees in your forest that have been burned time and again and are still living?

A. It don't kill it the first application; I don't know how many it takes.

Q. 67. It takes a great deal of smoke, don't it?

A. I have seed lots die inside of three years.

Q. 68. Haven't you seen trees die inside of three years from worms?

A. I don't know anything about the worms.

Q. 69. So it is that you don't know anything about the habits of worms?

A. No sir.

Q. 70. The fact is, you don't know one thing about the diseases of forests, do you?

A. I don't know nothing much about it; I know that worms cut the trees.

Q. 71. You think that smoke killed all of that timber?

A. I don't think it killed all of it, but a majority of it.

Q. 72. You have had your gardens nipped a few times?

A. Yes sir, several times.

333 Q. 73. When?

A. For eighteen years back; 'long back eighteen years ago.

Q. 74. That nipped by frost?

A. No sir, I never had my garden stuff nipped by frost but a few times.

Q. 75. You don't plant your garden very early do you?

A. No sir.

Q. 76. When was it that you- garden was nipped last year?

A. I had peas killed, corn-field peas, cabbage and peas hurt worst from the 5th of May up until the 10th of May last year.

Q. 77. How much did you get for that, how much did this arbitration board give you for that?

A. Last year?

Q. 78. Yes?

A. Thirty dollars.

Q. 79. For those peas damaged in May?

A. I give in all of the damage that was done.

Q. 80. Did you put that in, put your peas in that was damaged in May?

A. I don't remember.

Q. 81. How many peas did you have?

A. Seven acres.

Q. 82. Sowed or planted?

A. Planted.

Q. 83. Between the corn?

A. Yes sir.

Q. 84. When did you plant your field peas out there?

A. I planted my corn field, and whenever I planted my corn, I planted my peas; I plant sometimes in April and from that on up until the 10th of May.

Q. 85. How many peas did you get off that seven acres?

A. Two and one-half bushels.

Q. 86. You really don't know what it was that hurt your peas?

A. Yes sir, I think it was the smoke; I knowed it.

Q. 87. You just know it?

A. Yes sir.

Q. 88. You just know that nothing will hurt up in your neighborhood except the smoke?

A. It had been in there before that, and if there wasn't no frost there wasn't nothing else to hurt it but the smoke.

Q. 89. They are the only diseases that you know of that will hurt peas?

A. All I know of.

334 Q. 90. How many other diseases that will hurt your peas you don't know?

A. No sir.

Q. 91. You say that you saw some other fellow's pea patch bit there on May 13th?

A. May 12th.

Q. —. That Mr. Vestal's?

A. Yes sir.
Q. 93. You looked at that?
A. Yes sir.
Q. 94. That looked kinder frost bitten?
A. It looked sorter like frost bit, but I never seen any garden peas frost bit; not garden peas.
Q. 95. Frost can't bite them?
A. I don't say it can't; I never seen any.
Q. 96. Nothing can bite a garden pea but the smoke?
A. I never seen any bit only by that.
Q. 97. What was their condition?
A. The leaves was black and falling over; twisted up and brown.
Q. 98. You can't tell how long before they blacked and crisped up and turned over?
A. I don't think over two days.
Q. 99. I am not asking you what you think?
A. Well, I see'd them on the 12th and they was black and twisted up.
Q. 100. You didn't see them before the 12th?
A. No sir.
Q. 101. Where were they?
A. There at Epworth.
Q. —. That Mr. Vestal a son of Mr. John Vestal?
A. Yes sir.
Q. 103. Did you ever work for Mr. Vestal?
A. No sir; I have hauled a little lumber for him, but very little.
Q. 104. Mr. Vestal talked to you about this matter?
A. No sir.
Q. 105. Didn't he get you to come here as a witness?
A. No sir.
Q. 106. How much damage do you expect to get this year?
A. I don't know; to give a rough estimate I would say four or five dollars.
Q. 107. How much are you claiming?
A. I placed it at $67.00.
Q. 108. How much did you claim last year?
A. Sixty Dollars.
Q. —. How much did you get?
A. Thirty.
Q. 110. Has this board of arbitration looked over your place this year?
335 A. They come there, but they didn't look it over.
Q. 111. When were they there?
A. I think it was back in May some time when they were there.
Q. 112. This year?
A. Yes sir, but they didn't look it over; they walked out in the field a little ways, about 100 yards.
Q. 113. You don't think they tried?
A. I told them to look up on that mountain, and they looked up there and see'd dead timber.

Q. 114. You told them that it was dead?
A. I did, but they didn't go up there; they could see it from where we was at, but it didn't show as plain as it did up there.
Q. 115. Any way you showed them the timber?
A. Yes sir, at the distance.
Q. 116. They looked at it?
A. Yes sir.
Q. 117. They haven't allowed you anything yet?
A. No sir, not yet, and they didn't say whether they would; I didn't put in for any more than I did last year, and I 'lowed I would get about fo-r or five dollars, and that will help a fellow along, won't it, four or five dollars.

Redirect examination by Mr. DRAKE:

Q. 1. Last year, when did they come around?
A. It was nearly Christmas.
Q. 2. They just have so much money to divide around?
A. Yes sir.

Mileage of witness: 24 miles.

B. H. SEBOLT, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. How old are you Mr. Sebolt?
A. Going on seventy-eight years old; if I live until next Christmas I will be seventy-eight.
Q. 2. Where do you live?
A. I live over here about three miles from here.
Q. 3. Near what mountain?
A. The main top of the Blue Ridge runs out there in this direction (indicating), and makes a turn in that way (indicating).
336 Q. 4. How far from Bushy Head mountain?
A. Let me see; it is something like a mile and a half side.
Q. 5. How far from Chestnut gap?
A. Back into the left of there, a little South sir.
Q. 6. On Fightin' Town Creek?
A. No sir, on Sugar Creek; near the headwaters of Sugar Creek.

It is agreed by and between counsel for the State and defendant that the witness lives eight miles from Copperhill and ten and a quarter miles from Isabella.

Q. 7. How long have you been living in that neighborhood?
A. Forty-three or four years.
Q. 8. You are a farmer?
A. Yes sir.
Q. 9. How much land do you own?
A. One Hundred and Ten acres.
Q. 10. Have you seen any smoke in that neighborhood the last few years, sulphur smoke?

A. Yes sir, I have seen it in there for the last ten or fifteen years.

Q. 11. To what extent did you see it in there in 1913, and did you observe any damage?

A. Yes sir, it done a great deal of damage?

Q. 12. What kind of crops did you have in there last year?

A. Very sorry, on account of the smoke damage.

Q. 13. What did you have planted, what kind of crops?

A. We had peas, beans, potatoes, cabbage, and all kind- of garden stuff; and corn.

Q. 14. Did you observe any damage on corn, and if so to what extent?

A. Very bad; I couldn't tell how bad.

Q. 15. How did it effect it?

A. It parched up the blades; and dried up and killed the tassels and the silk. Maybe the silk would be looking fresh and all right and the next day it would be dead. The corn would silk out and look green and fresh and all right, and then next morning it would be down dead.

Q. 16. What would cause it to go down that way?

A. Smoke.

337 Q. 17. Did you see that smoke?

A. Yes sir.

Q. 18. Could you smell it?

A. Yes sir.

Q. 19. When you would see that smoke in there, how long would it be before you could observe its effects?

A. If it was sunshiny and it would come down in there, by twelve o'clock the next day it would show up distinctly.

Q. 20. How would it effect your garden truck?

A. It would parch it up like frost. I will tell you how it does; you take fire and hold it close to it, and it would draw it up and turn it a sorter brown color like fire would, if you hold it close to the stuff.

Q. 21. Did you see that in 1913?

A. Yes sir, a plenty.

Q. 22. In 1914, have you seen smoke in there?

A. Yes sir.

Q. 23. Did you see any of it in there in May?

A. Yes sir. The first I paid any attention to it in May was the 7th.

Q. 24. Did you notice any other dates in May, that you remember?

A. I think that it was the 10th and 11th that it was in there again.

Q. 25. Did you see any of it in June?

A. Yes sir, it come down in there on the 14th of June. It would usually be two or three days that it would come down if the wind stayed in a certain direction.

Q. 26. From what direction would be the wind when that smoke came in there?

A. Mostly a Northeast direction; not exactly North.

Q. 27. When the wind is from the Northeast it comes into your neighborhood?

A. Yes sir; it comes up a little creek there and settles down on the fields.

Q. —. Go ahead about the dates, is there any other dates?

A. Yes sir.

Q. 29. Did you see it in there in July?

A. Yes sir; the second, third, fourth, fifth and sixth it was in there to some extent; it was bad on the 3rd and 4th; I could tell that it come down on the Second of July.

Q. 30. You say that you could tell it; do you mean by that that you could see it?

A. Yes sir; anybody can tell that smoke.

338 Q. 31. Could you see it and smell it on the 2nd, 3rd, 4th and 5th and to some extent on the 6th?

A. Yes sir.

Q. 32. Did you observe any of the effects of that on the growing vegetation during that time?

A. Yes sir; I could see it. I haven't been away from home this summer; all the morning it come in there, and the young and tender sprouts I could see by the evening of the second day that they was turned red and kinder kinked up; the sprouts would keep growing and coming back, and the smoke would come back and parch it; they would grow a little and maybe the next time it would kill them, and if a man don't think I am telling the truth about it he can go and see.

Q. 33. Just tell what you saw, Mr. Sebolt, if you have been up on the mountains this year and have seen the smoke coming out of these plants, tell what day it was and how come you to go up there?

A. I went up there one Sunday evening——

Q. 34. What day was that?

A. It was July 5th I went up on the mountain. I met up with Mr. Trammel and I went on up on the mountain into his orchard. The leaves was all kinked up and dried up, and while I was up there on the 5th day of July, I saw the smoke coming out of that stack, but it wasn't the main stack, the big stack there, it was out of some of them stacks, but it didn't boil out like it does out of that big stack.

Q. 35. You have been up there and have seen it before?

A. Yes sir; I have seen it ever since they have been running.

Q. 36. The big stack wasn't running that day?

A. No sir.

Q. 37. Where did that smoke go?

A. It come right through this county and scattered every way.

Q. 38. See any close to you?

A. Yes sir, all around me down in the creek.

Q. 39. Did you smell it?

A. Yes sir.

Q. 40. Did you observe the effects of that smoke soon thereafter on the timber?

A. Yes sir, I discovered plenty of it that way.

Q. 41. Describe how the forest trees generally, in your neighborhood are effected by that smoke?

339 A. You can stand at my place there and count several dead trees that died this year; it is the heaviest on the chestnut and on the young undergrowth; it will parch up the young undergrowth.

Q. 42. Have you observed it on the oaks, if so what kind?

A. It has the worst effect on the black oak and Spanish oak; it is bad on the black oak timber and the apple trees and all kinds of fruit trees.

Q. 43. I am speaking of the forest trees?

A. The chestnut and the oak, and most all kinds of trees there.

Q. 44. How was it last year?

A. It was bad last year; killed some trees in there.

Cross-examination by General FOWLER:

Q. 1. I believe you stated, Mr. Sebolt, that if the smoke came down one day, you could see the effects of it the next day?

A. Yes sir.

Q. 2. It took from six to eight hours to develop?

A. Yes sir.

Q. 3. Would the sun have to shine out before or after?

A. It would have to shine out before you could tell the effects.

Q. 4. That is, it would have to be on the foliage some five or six hours to get started?

A. Yes sir, of course. I have been watching the thing a good while, and when it hurts the worse, and when we have had a shower of rain and the smoke comes in it settles down heavy; it will come in and settle down heavy and look like a fog, and when that dries off you can see the damage.

Q. 5. When it comes in there and blows right on, you don't see so much effect; it doesn't hurt as much?

A. No sir.

Q. 6. When there is moisture in the atmosphere is when it hurts the worst?

A. Yes sir.

Q. 7. I believe you said that it was in there on the second of July, or the first of July?

A. Yes sir, and on the 4th and 5th.

Q. 8. And on the 6th?

A. Yes sir; to some extent.

Q. 9. How about the 7th?

A. I don't know that I noticed it on the 7th.

340 Q. 10. None on the 8th?

A. I can't tell much on the 8th.

Q. 11. These dates that you were speaking about; the wind was blowing, was it?

A. Blowing to some extent; it wasn't blowing there all the time; it seemed like it would kinder blow during the morning and stop like, and then the smoke would settle in on the creek.

Q. 12. It was Sunday I believe you said that you looked over towards Ducktown?

A. Yes sir.
Q. 13. How high a point was you looking from?
A. I don't know.
Q. 14. How far was your house East of it?
A. Well sir, the house is something like half a mile.
Q. 15. Higher than your house?
A. Yes sir.
Q. 16. You couldn't see any of the stacks from where you were?
A. I could see the smoke boiling up.
Q. 17. But you couldn't see the stacks?
A. No sir, I couldn't see the stacks.
Q. 18. You couldn't see that big stack could you?
A. I could see close to the top of it.
Q. 19. How close could you see to the top of it?
A. I don't know sir.
Q. 20. There are some copper mines there as well as furnaces around there, aren't there?
A. Around where?
Q. 21. Over at Copperhill and Ducktown and between them; there are mines as well as furnaces?
A. I don't know; I reckon there are.
Q. 22. Do you know where they get the copper?
A. They get the ore out of the mines.
Q. 23. Don't they have stacks at these mines?
A. Yes sir, I reckon they do; I guess they have engines where they draw it out.
Q. 24. They have stacks at the power plants at the furnaces too, don't they?
A. Yes sir.
Q. 25. And smoke comes out of those?
A. Yes sir, of course.
Q. 26. You were looking over towards Copperhill and Isabella, that is, the basin.
A. Yes sir.
341 Q. 27. And you saw smoke coming out of that basin?
A. Yes sir, coming out of the basin.
Q. 28. That is all you can say about it, isn't it?
A. I could tell that it was coming out of the stacks.
Q. 29. The smoke boils up regardless of what it comes out of, don't it?
A. It makes a difference as to what color it is.
Q. 30. Isn't that smoke the same color as a fog?
A. No sir.
Q. 31. You never saw any fog anything like that smoke?
A. It is bluer than fog is.
Q. 32. Is the smoke that comes out of those other stacks the color of fog?
A. No sir, it's right dark. Didn't you never see smoke?
Q. 33. Do you know whether they fire with coal or not?
A. They do for their engines.
Q. 34. Do you know that?

A. Yes sir.
Q. 35. Did you ever work there?
A. Yes sir.
Q. 36. When did you work there?
A. Six or seven years ago.
Q. 37. Who for?
A. The Tennessee Copper Company.
Q. 37. How long did you work for them?
A. I don't know; I never kept no account of the dates.
Q. 38. Did you ever taste that smoke?
A. Yes sir, wouldn't any man taste it if he had it in his mouth.
Q. 39. You tasted it and smelled it too?
A. Yes sir.
Q. 40. I believe you say that you saw smoke in there in May, 1914, this present year?
A. Yes sir.
Q. 41. Did that scorch anything?
A. Yes sir.
Q. 42. Scorch your beans?
A. Yes sir, beans, peas and taters.
Q. 43. About killed it?
A. It ruined my tater crop.
Q. 44. Did it come over there in June?
A. Yes sir.
Q. 45. What days?
A. I can't tell you exactly; it was along in June several days.
Q. 46. Don't you know a single day that it came in there in June?
342 A. It come over there I suppose, it was the 10th of June; I have got it down on the almanac at home; whenever it come in there I put it down on the almanac.
Q. 47. So it is, that you can't remember a single day in June when it was there?
A. No sir, I can't say positively.
Q. 48. Was it there on the 25th of June?
A. Seems like it was about that time; the 20th or the 25th.
Q. 49. And the 26th of June, wasn't it the 25th and the 26th of June that it was in there?
A. Might have been, I can't tell you.
Q. 50. What is your recollection?
A. As well as I recollect it was about that time; I kept particular account of it after that in July; I commenced to put it down in July on this here piece of paper.
Q. 51. Didn't you put it down in June?
A. Not here; I have got it at home.
Q. 52. But you think you saw it the 25th or the 26th of June?
A. Something about that time.
Q. 53. Was it there the first of June?
A. It was there several times in June.
Q. 54. Scorch anything during that time?
A. Yes sir.

Q. 55. Pretty badly?
A. Yes sir.
Q. 56. About killed everything?
A. No sir, not killed down; they would take a start and grow again.
Q. 57. Take a start again in a day or two?
A. Yes sir, they would take a start again.
Q. 59. Been killed down a dozen times and grow again?
A. No sir, not that many times.
Q. 60. How often?
A. It might have been four or five.
Q. 61. It had been kicked down about the 25th or 26th of June, before it came in there on this second, third, fourth and fifth of July?
A. I can't say now. I remember I spoke to my son about it about the 29th or 30th, and told him that it was the worst I had seed in years.
Q. 62. That was on the 29th of June?
A. Yes sir.
343 Q. 63. And it was about the 25th or 26th of June that it was in there?
A. I don't think it was further off than that; might have been the 20th; not more than the 20th, as well as I recollect.
Q. 64. Along the first of June, the 8th, 9th and 10th, any in there then?
A. Yes sir.
Q. 65. That scorch anything?
A. You could see the effects; it parched things up.
Q. 66. Every time it came in there you could see the effects?
A. Yes sir.
Q. 67. You never saw a single time that you couldn't see the effects?
A. No, every day that it came in there you could see the effects of it; it still does.
Q. 68. Was it in there last year?
A. Yes sir.
Q. 69. Same way?
A. Yes sir, from the first of the year on.
Q. 70. How much did it damage you then?
A. Nothing worth anything.
Q. 71. How much?
A. Ten Dollars.
Q. 72. How much were you damaged?
A. I claimed $200.00.
Q. 73. How much have you been damaged this year?
A. I don't know; I wouldn't take $100.00 for it.
Q. 74. How much have you filed a claim for?
A. I don't recollect; I didn't file my claim up until now; I filed it back in the summer.
Q. 75. When did you file your claim?
A. On the 24th of June.

Q. 76. How much did you claim that you were damaged up until the 24th of June?
A. About Seventy-five dollars, I suppose.
Q. 77. They haven't awarded you anything yet?
A. Not one cent.
Q. 78. Did they come out and inspect your garden?
A. No sir.
Q. 79. They have never seen your crop or anything like that?
A. No, they never have done anything to it.
Q. 80. You are expecting them to?
A. I don't know whether they are going to do anything or not. I haven't go- no expectation of it.
Q. 81. I believe you said that you saw the effect on this smoke on the sprouts?
A. Yes sir; I have noticed it on the sprouts is one special
344 thing I noticed; and then I saw the effects on my garden saw the effects on my garden right there at it.

Mileage of witness: Eight Miles.

W. T. ANGEL, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. Where do you live?
A. I live between here and Copperhill, near Mr. Vestal's; a mile and a half this side of Epworth.
Q. 2. Which way?
A. East.
Q. 3. How long have you been living there?
A. Right there at that place, four years.
Q. 4. Have you seen any smoke in there this year?
A. Yes sir.
Q. 5. Do you know what it is when you see it, can you smell it?
A. Yes sir.
Q. 6. What times this year have you seen it in there?
A. I saw it there along in June and in May, when it damaged me some, but the smoke I saw last and paid attention to was the 3rd and 4th of July.
Q. —. How bad was it on the 3rd and 4th of July—could you see it?
A. Yes sir, and taste it.
Q. 8. Smell it?
A. Yes sir.
Q. 9. What effects of it did you see on your garden stuff?
A. I saw it ruined my beans and stuff.
Q. 10. How?
A. It bit them and ruined them.
Q. 11. How did they look?
A. Looked right brown.
Q. 12. Did you have any irish potatoes?
A. Yes sir.

Q. 13. Did it bite them?
A. Yes sir, and my sweet potatoes too.
Q. 14. How did it effect your irish potatoes when it bit them?
A. The leaves turned right brown and fell off.
Q. 15. Did you have any corn?
A. Yes, sir, eighteen acres.
345 Q. —. Did you see any effects of it on your corn?
A. Yes sir.
Q. 17. How did it effect your corn?
A. It would turn right white and then brown.
Q. 18. The blades of it?
A. Yes sir.
Q. 19. How did it do the tassels and the silk?
A. They looked just like they had been burned and fell off.
Q. 20. Have you seen the effect on the trees, where it bit the trees and leaves around there?
A. Yes sir bit the leaves too, and they would fall of-.
Q. 21. How far are you this side of Copperhill, do you suppose?
A. They count it three or four miles, the best I recollect.
Q. 22. On which side of Tocoa River, West or East?
A. West side.
Q. 23. You are in Fannin County?
A. Sure.

Cross-examination by General FOWLER:

Q. 1. You saw smoke in there in May of this year?
A. Yes sir.
Q. 2. What dates?
A. I can't recollect the dates it was in there; I never kept any record of it.
Q. 3. Why didn't you?
A. Because I wasn't looking for it as much then as I now do.
Q. 4. Can't you tell a single day in May that it was in there?
A. Along about the first and second of May.
Q. 5. Third and Fourth?
A. Yes sir, somewhere along there. We had it in there in May off and on a right smart.
Q. 6. Was it bad in there then?
A. Yes sir, it done same damage.
Q. 7. There in June?
A. Yes sir.
Q. —. First of June?
A. Yes sir.
Q. 9. 5th of June?
A. Yes sir, along up in there.
Q. 10. Eighth and ninth?
A. I don't know about that.
Q. 11. The fifteenth of June?
A. I think it was along about the fifteenth.
Q. 12. Twenty-fifth day of June?

A. I wouldn't say about that.
346 Q. 13. Twenty-seventh?
A. I don't know.
Q. 14. What about the 29th of June?
A. I don't think any was down there that day.
Q. 15. How was it with your neighbors on the 29th, do anything to them?
A. I heard some complaint about it.
Q. 16. Which one of your neighbors was it?
A. A man I rent from, Harvey Cochran.
Q. 17. What was it that he said that it did to him on the 29th?
A. He said that it was down on his timber and all over his stuff.
Q. 18. Which timber of his did it get in on the 29th?
A. His apple trees; he had apples, and I think all over his field.
Q. 19. He claimed that was done on the 29th?
A. Somewhere along there.
Q. 20. The 29th or not, or the 28th?
A. I don't know about that.
Q. 21. On the first of July, did you see it?
A. The first?
Q. 22. Yes?
A. It was on the 3rd and 4th I saw it in there.
Q. 23. Didn't it do something on the second of July?
A. Not that I know of; it was the 3rd and 4th I paid attention to it.
Q. 24. Why?
A. Because it ruined my stuff?
Q. 25. That was back in May wasn't it?
A. It did sorter come over then.
Q. 26. Killed it again in June, didn't it?
A. It did off and on all along.
Q. 27. If it killed your stuff in May, why didn't you give attention to that?
A. I have give attention to it; I have put in an account for that a long time ago.
Q. 28. Have you put in any for June?
A. No sir.
Q. 29. Do you intend to?
A. I ought to.
Q. 30. Do you intend to?
A. I don't know whether I do or not.
Q. 31. Why don't you?
A. I say that I ought to; I don't know whether I will or not.
Q. 32. You intend to put in for July?
A. Yes sir, a body ought to do that.
Q. 33. Then you intend to?
A. Yes sir.
Q. 34. If you are keeping dates in July, why didn't you keep them for June?

347 A. I have got the 3rd and 4th; that's when it done the devilment.

Q. 35. It did some devilment in June, didn't it?

A. It never hurt as bad in June as it did in July.

Q. 36. It did do devilment to you?

A. Yes sir.

Q. 37. St-ll you didn't keep any of those dates?

A. No sir, not in June.

Q. 38. But it has been hammered into you, the 3rd and 4th of July?

A. I hammered it into myself.

Q. 39. Mr. Vestal talked to you?

A. Yes sir, he has talked to me; I called Mr. Vestal one day when he was passing my place.

Q. 40. When?

A. 3rd of July, I think.

Q. 41. How close do you live to Mr. Vestal?

A. Mile and a half this side.

Q. 42. You now work for Mr. Vestal?

A. No sir, I ain't worked for him lately.

Q. 43. When did you work for him?

A. It was a year or two ago.

Q. 44. Did you ever sell him any timber?

A. No sir.

Q. 45. Don't you own your farm?

A. No sir.

Q. 46. Whose farm do you live on?

A. H. N. Cochran's farm.

Q. 47. Did you get any damages for last year?

A. I reckon I got as much as $5.00.

Q. 48. How much did you claim for last year?

A. It was put in with Mr. Cochran's and I got $5.00 out of the bunch.

Q. 49. That the claim which you put in in May?

A. No sir, that was for last year.

Q. 50. I believe that you have put in a claim for May?

A. Yes sir, I think so; May or June one.

Q. 51. How much damages are you claiming for this year?

A. Ten dollars is what I put in for.

Q. 52. You haven't put in any for July of this year?

A. No sir.

Q. 53. You have just got that ready to put in?

A. I reckon I have.

348 Q. 54. You are claiming that your potatoes and beans and your corn and various things have been killed by this smoke three times this year; claiming damages for three crops?

A. No sir, I have just put in for May.

Q. 55. You are claiming a crop for every month; that it was killed every month during the summer, aren't you?

Mr. DRAKE: We except to that question because the witness has stated that he is not claiming for three crops, but is only claiming

damage to his crops prior to June, when he filed his claim. Exception overruled. Appeal prayed and granted.

Q. 56. You are going to claim for June damage, aren't you?
A. Third and fourth of June damage.
Q. 57. Also for July?
A. I can't tell you.
Q. 58. It didn't damage you in August of this year?
A. I haven't seen much smoke in August of this year.
Q. 59. How often have you been in that Ducktown basin?
A. I can't tell you.
Q. 60. You have been there many and many times?
A. Yes sir.
Q. 61. Aren't there about ten or fifteen stacks that continually emit smoke in that basin?
A. I don't know.
Q. 62. The furnace stacks, the power plant stacks and about eight or ten stacks from the mines?
A. I suppose so, I don't know.
Q. 63. There are ten or a dozen stacks from which the smoke pours all the time, is that true?
A. Some is always coming from there.
Q. 64. You have seen at least ten or fifteen stacks haven't you?
A. I never have counted them.
Q. 65. There is quite a lots of stacks there?
A. There is a lot of smoke comes from there; I never paid any attention to the stacks.
Q. 66. How many stacks have you ever noticed?
A. None but that old big stack.
Q. 67. That's the fellow that pours smoke all the time?
A. I reckon it is.

Q. 68. He is the fellow that poured that smoke out in
349 May, and in June and in July, wasn't it?

A. Yes sir, I reckon so. When that was shut down it didn't.

Q. 69. He is the fellow that poured that smoke in there on the 26th and the 29th of June, wasn't it?
A. Yes sir, before they shut down. But on the 3rd and 4th of July that wasn't running at all.
Q. 70. But he is the fellow that was pouring out smoke on the 29th of June?
A. It always pours out smoke when they are running it. I didn't pay not attention to it.
Q. 71. Except on the 3rd and 4th of July, you did pay attention to it on the 3rd and 4th of July, but not the other days?
A. Yes I do pay attention to it every time it comes in there and bites my stuff.
Q. 72. Who got you to come here as a witness, Mr. Vestal?
A. No sir.
Q. 73. Were you a witness for Mr. Vestal in his law suit?
A. No sir, not that I know of.
Q. 74. You didn't go to Chattanooga to testify?

A. No sir. I have never been to Chattanooga.

It is agreed between counsel for the State and the defendant that witness lives four miles from Copperhill and six and a half miles from Isabella, air line.

Redirect examination by Mr. DRAKE:

Q. 1. I believe you stated that the reason you can state positively about the 3rd and 4th of July, was that the smoke come in there and killed some of your stuff?

A. Yes sir.

Q. 2. Can you see the stack of the Tennessee Copper Co. from your place?

A. Yes sir, right above my place there you can see it any time.

Q. 3. Did you see it on the 3rd and 4th of July?

A. I wasn't up where I could see it. Whenever I am at work up there I can see it.

Q. 4. Do you know the rules of the board of arbitration committee, how soon you have to file your claim?

350 A. They said it would have to be filed fifteen days after the smoke; I don't know.

Q. 5. From the time the damage is done?

A. Yes sir, from the time it is done, fifteen days is what they tell me, I don't know.

Q. 6. You have put in a claim for damages?

A. Yes sir.

Mileage of witness: 16 Miles.

A. J. BELL, sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. HILL:

Q. 1. How old are you Mr. Bell?

A. Sixty Five.

Q. 2. Where do you live?

A. I live out here at Mineral Bluff.

Q. 3. How long have you lived there?

A. I moved there last November.

Q. 4. Where did you live prior to that time?

A. Right down about four miles this side of Isabella on the edge of Cherokee County, in North Carolina.

Q. 5. How long did you live there?

A. I lived there about twenty-four years.

Q. 6. Did you ever hold any public office?

A. Yes sir, I served as Justice of the Peace.

Q. 7. How long?

A. Twenty-one years.

Q. 8. Have you ever noticed any smoke in the region you live or in the region where you lived previously?

A. Yes sir.

Q. 9. When and how often?

A. I have noticed it ever since the plant went to work.
Q. 10. What plants?
A. The D. S. C. & I. and the Tennessee Copper Co.
Q. 11. You ever been to these plants?
A. Yes sir.
Q. 12. Ever see the smoke there and smell it?
A. Yes sir.
Q. 13. Do you know the condition of the forests in that section of the country?
A. Yes sir, I think I do.
Q. 14. Have you been through the forests?
A. Yes sir.
Q. 15. What is their condition?
A. Its bad.
351 Q. 16. What is the condition this year?
A. In places it's bad.
Q. 17. You ever see smoke in there?
A. Yes, sir.
Q. 18. What was the condition in there last year?
A. It was bad last year but not so bad as this year.
Q. 19. Did you notice any particular evidences of smoke?
A. Yes, sir.
Q. 20. Describe them?
A. Well, sir, there is a streak there something like a mile or a mile and a quarter just beyond me where I live; I am on the South edge of it, it lies North of where I live, that the timber is the worst tinged I think I have seen it there for the last ten years.
Q. 21. What do you mean by tinged?
A. I mean the leaves was bit by the smoke.
Q. 22. What appearance would they have?
A. They would first crimp up, and then they would turn a reddish cast, and fall to the ground.
Q. 23. Many of the leaves on the ground?
A. A good many, yes, sir.
Q. 24. How long is that strip through there?
A. I don't know, sir, I haven't been to the other end.
Q. 25. Don't you know how long it is?
A. No, sir.
Q. 26. Could you say what proportion of that timber is damaged there badly,—the damage on that strip?
A. 20% anyway.
Q. 27. About the crops and garden truck in there, do you know anything about the condition of that?
A. I know about the condition of some of the crops.
Q. 28. Ones that you have noticed?
A. Yes, sir.
Q. 29. Have you ever seen the smoke come in on them?
A. Yes, sir.
Q. 30. What is their condition?
A. The fodder would turn white on the corn, and on the garden

truck, the leaves will crimp up, the tater tops and so on, and then it will turn a kind of reddish color and then brown.

Q. 31. Last year, do you remember any particular dates that you saw that smoke in there?

A. Yes, sir.

Q. 32. How do you remember them?

352 A. I remember one time in particular. I had been down to Chattanooga to attend a trial, and I went home on the 7th of May, and the smoke was in there then very bad for four or five days or maybe a week off and on; in pretty bad.

Q. 33. When did you get home?

A. On the 7th day of May, 1913.

Q. 34. When did the smoke come in there?

A. The 7th and 8th and off and on for a week or more it was in there.

Q. 35. Did you notice the timber and crops during that time, or not?

A. Yes, sir, I noticed my crop and several others.

Q. 36. What was their condition?

A. The corn was bit down just like a killing frost.

Q. 37. What about the potatoes?

A. They was bit.

Q. 38. Were they damaged or not?

A. Yes, sir, they was.

Q. 39. What were you doing in Chattanooga?

A. I had been down there to court.

Q. 40. In whose case?

A. Mr. Vestal's.

Q. 41. Do you know anything about that board of arbitration—how they require you to put in a claim?

A. Yes, sir.

Q. 42. State whether or not they require you to give the dates that the smoke comes in there——

A. Yes, sir.

Q. 43. Is that one of your reasons for remembering dates?

A. Yes, sir.

Q. 44. You put them down so as to put them in the records?

A. Yes, sir; that is the ruling they made; every fifteen days, and give the dates.

Q. 45. You have to give the date on which it happened?

A. Yes, sir.

Q. 47. How close to the Georgia line were you when you were living in North Carolina?

A. Not over 300 yards.

Q. 48. About how far from these plants?

A. Four miles from the D. S. C. & I. Co. and four and a half miles from the Tennessee Copper Company.

Q. 49. While living up there, did you ever come down into Georgia?

A. Yes, sir, every week or so.

Q. 50. That damage that you saw; that entirely in Georgia?
353 A. It was in both places.
Q. 51. Did you really live in both places?
A. My land bordered on the Georgia line for a mile or more and my stock would come across the line and did a number of times.
Q. 52. And you were after them?
A. Yes, sir, I knocked about there.
Q. 52. That damage you spoke of in North Carolina and in Georgia, was that about the time you described as coming back from the federal court?
A. Yes, sir.

Cross-examination by General FOWLER:

Q. 1. You sold your land in North Carolina and moved over here?
A. No, sir, a portion of it.
Q. 2. Your land ever damaged over there?
A. There is but little timber on it now, sir.
Q. 3. You ever sell any timber?
A. Yes, sir, I have sold it for wood.
Q. 4. Who did you sell it to?
A. I sold some of it to the citizens over there, and when they roasted ore in the heaps, I sold a lot of it there.
Q. 5. When was that?
A. 1896 and 1897.
Q. 6. Was your timber killed way back there many years ago when they were roasting ore?
A. Yes, sir, a portion of it was.
Q. 7. Did you get any damages for it?
A. No, sir.
Q. 8. Never did sue them?
A. Yes, sir, I sued them.
Q. 9. The case ever been decided?
A. No, sir; I drawed the suit when they let me off; when they let me off and wouldn't take any more timber, I sued them, and then when I sued them they proposed to treat me right; they proposed to take my timber and my quartz and let me work, and so on, and I withdrawed the suit.
Q. 10. Where was your suit, where was your case begun?
A. The suit was in Polk County, Tennessee.
Q. 11. How long did you work for them after that?
A. I worked for them after i withdrawed that suit for two years.
354 Q. 12. Then what happened?
A. Not anything.
Q. 13. You quit working for them?
A. Yes, sir.
Q. 14. You sue them again?
A. No, sir.
Q. 15. Then you went around trying to get other fellows to sue them?

A. No, sir; I am not fighting that company.
Q. 16. You have been a kind of case settler, you have settled a number of cases, haven't you?
A. No, sir, I haven't settled a number of case: I have tried to settle several.
Q. 17. You have been employed by different parties to settle with the company?
A. No, sir.
Q. 18. You ever been paid anything for trying to settle cases?
A. No, sir.
Q. 19. When you did settle a case, did you get anything?
A. I *gone* Ten Dollars on one case I settled there at Benton.
Q. 20. Whose case was that?
A. J. J. Brown.
Q. 21. Case against the company?
A. Against the D. S. C. & I. Co.
Q. 22. How many times have you been a witness against this company?
A. I can't tell you.
Q. 23. How many times have you been a witness for Mr. Vestal here?
A. Twice.
Q. 24. Every time he had a trial you testified for him?
A. Yes, sir.
Q. 25. You have been a witness in practically all cases of this kind in this country haven't you?
A. No, sir, not in all cases. I ain't been a witness in all cases. I have been a witness a good many times; I have been a witness in several cases.
Q. 26. You have testified at least a dozen times in these cases?
A. Yes, sir, I guess I have, and more too.
Q. 27. You know it pretty well by this time?
A. Yes, sir.
Q. 28. How was it that Mr. Vestal had you out talking to you about it, if you know so well?
A. Mr. Vestal hasn't talked to me. He claims that I know about it, and I think I do.
Q. 29. You and Mr. Vestal came in together when you
355 came in the court room?
A. Yes, sir.
Q. 30. Did he go out for you?
A. No, sir.
Q. 31. He is right there now sitting by the attorney for the State of Georgia?
A. Yes, sir.
Q. 32. Prompting him what to ask you?
A. I don't know.
Q. 33. And Mr. Shippen is sitting right there on the other side of Mr. Vestal?
A. Yes, sir; Mr. Shippen is a man I am not acquainted with.
Q. 34. Did you work for the Ducktown Company in 1902?
A. No, sir.

Q. 35. Didn't you in 1902 say that the Ducktown Company wasn't making enough smoke to smoke a rabbit out of his hole?

A. Yes, sir.

Q. 36. Who did you tell that to?

A. Mr. Reese, and maybe some others. That was when they cut off their roast heaps and they was running roasted ore through the plant there. The people was all hostile then and was suing, and I said I didn't see what the people was so hostile against the D. S. C. & I. Company for; that they wasn't making more than enough smoke to run a rabbit out of its hole; that's what it was.

Q. 37. You now say that they were making smoke?

A. No, sir, not at that time. You see at that time they was running roasted ore through and they had burned all the sulphur out in these piles, and there wasn't but very little sulphur smoke in it.

Q. 38. Wasn't doing any damage at all?

A. No, sir, not at that time they wasn't.

Q. 39. Yet the people were hostile?

A. Yes, sir; there was a heap of talk of suing.

Q. 40. The people are hostile regardless of the amount of smoke that comes out there anyway?

A. No, sir.

Q. 41. If there wasn't any smoke coming out at Ducktown at all, the people would be hostile, wouldn't they?

A. I can't tell what the people thinks about it.

Mr. DRAKE: We except to the question and answer as irrelevant. Exception ovtrruled. Appeal prayed and granted.

356 Q. 42. You had to be kinder hostile to the company, to be elected Justice of the Peace, didn't you?

A. No, sir. That's a place I never wanted in my life.

Q. 43. But you had to be hostile, or you couldn't have been elected.

A. No, sir, I wasn't hostile at all. I ain't fighting the D. S. C. & I. Co. I haven't never done it. While I did sue them, as soon as we compromised I withdrawed that suit.

Q. 44. Squire, do you remember when that high stack went up on the Tennessee Copper Company?

A. Yes, sir.

Q. 45. Wasn't the conditions over in North Georgia very much worse right after that?

A. I don't know; I wasn't around in this country a great deal.

Q. 46. Didn't it carry the smoke off further?

A. Of course it carried further.

Q. 47. In your own country, after that stack went up, wasn't it very much worse?

A. Not right in there; I can't say that it was a bit worse; I am living within four miles.

Q. 48. It reached you anyway?

A. Yes, sir.

Q. 49. I am speaking of down in here six, eight and ten miles away, wasn't it very much worse after that high stack went up?

A. Of course, the higher in the air it would go, the further away it would carry.

Q. 50. When you saw the effects, after that high stack went up in 1906, don't you know that it scorched the forests very much worse than before?

A. Yes, sir, it's obliged to hurt it?

Q. 51. As a matter of fact, it did scorch them very much worse?

A. No, as I said a while ago, I didn't travel through this section of the country back out in here a great deal: I hardly ever went in there.

Q. 52. And don't you know, furthermore, that when these acid plants were installed, the condition of the timber was very much better?

A. Yes, sir, it was a great deal better than it was before they was put in.

357 Q. 53. Whereas stretches of the forest were before burned badly, and since that time, you only notice patches here and there?

A. Yes, sir.

Q. 54. Isn't it 20% better?

A. Yes, sir.

Q. 53. Isn't it a great deal more than that?

A. I expect it is.

Q. 56. Now, when you travel through the forests, now and then you will notice a patch effected by it?

A. Yes, sir, you will see it in streaks.

Q. 57. You think that it is worse this year than it was last year?

A. I say that it is back there.

Q. 58. In that section you have been talking about?

A. Yes, sir.

Q. 59. What do you mean by back there?

A. I mean beyond my place about five miles from here, to the edge of that back of my place.

Q. 60. This distance of five miles from Blue Ridge, you don't notice it at all?

A. Yes, sir, you can see signs of it all about; then there is streaks that seem to be a great deal worse than the other.

Q. 61. You have noticed the crops generally?

A. Yes, sir.

Q. 62. Aren't they good?

A. Yes, sir, crops are pretty forward.

Q. 63. As a matter of fact aren't the crops this year better than usual?

A. Yes, sir, I think so.

Q. 64. Isn't it a fact that so far as you have noticed the crops are in good condition?

A. Yes, sir, they are, with the exceptions of some places where I have noticed that they have been bit by the smoke?

Q. 65. Where was that?

A. In that streak we have been talking about and if you will come to my house, I could show you a streak in there.

Q. 65. In what?
A. Corn.
Q. 66. You think your corn is effected?
A. I don't think it; I know it.
Q. 67. That was scorched early in the season?
A. It was scorched on the 10th of July. I had beans and stuff bit back in June before this heavy scorch on my corn: that was on the 10th of July.
Q. 68. It was then in silk?
A. No, sir, it was coming up. There is a streak in there
358 where the blades had come out, four and five to the stalk, and that fodder was badly effected. Now there ain't two blades to the stalk in some places.
Q. 69. Leaving out this crop that you noticed there, in June the crops that you noticed in North Georgia were in good condition?
A. Yes, sir.
Q. 70. Have you put in any claim before this arbitration commission?
A. Yes, sir; one.
Q. 71. When was that, last year?
A. No, sir, this year; it is for that smoke.
Q. 72. For damage to that corn?
A. Yes, sir.
Q. 73. How much damage do you claim?
A. I disremember now; some eight or ten dollars.
Q. 74. How much of a patch did you have?
A. Two acres.

Redirect examination by Mr. DRAKE:

Q. 1. In speaking about the condition of timber, lands, etc., you were speaking locally, of the locality in which you live around Mineral Bluff?
A. Which,—about the browning?
Q. 2. Yes?
A. Yes, sir.
Q. 3. The bad condition of the forest, etc.?
A. Yes, sir.
Q. 4. You were asked about testifying in Mr. Vestal's case, did you state that you testified in two cases?
A. No, sir, I testified twice in the same case.
Q. 5. You were a witness in several cases?
A. Yes, sir.
Q. 6. How long have you known the plants up there, and with their history and their work?
A. I can't give the dates they started. I was away from there about one year after the D. S. C. & I. started operating, but since then I have been acquainted all the time.
Q. 7. Pretty familiar with it?
A. Yes, sir.
Q. 8. The people want you because you are a good witness?
A. I don't know whether they do or not.

Q. 9. In 1902, they was mostly roasting; or running ore already roasted?

359 A. Yes, sir.

Q. 10. Have they roasted any since then?

A. No, sir.

Q. 11. They have been smelting green ore?

A. Yes, sir.

Q. 12. Are they making any more smoke than they were in 1902?

A. Not so much more, but it is a good deal stronger of that sulphur.

It is agreed by and between counsel for the State and the defendant that the witness lives seven and three-quarter- miles from Copperhill and Eight and three quarter- miles from Isabella.

Mileage of witness: Nine miles.

Recross-examination by General FOWLER:

Q. 1. Of course you are much nearer to Copperhill than to Isabella?

A. Not much; about a mile.

Q. 2. The Copperhill Furnaces are a great deal larger than those at Isabella?

A. Yes, sir, they smelt a good deal more ore than they do at Isabella.

Q. 3. And they make a great deal more of the poisonous fumes too, don't they?

A. They are obliged to, because they handle more ore.

Q. 4. The Isabella Company is situated North of a range of Hills too, aren't they?

A. They are from the Tennessee Copper Company; hills and ridges between them.

Q. 5. You say that you have put in a claim for damages the present year, you understand, of course, that these damages are to be paid out of the fund paid for damages done by the Tennessee Copper Company, and not by the Isabella Company?

A. I suppose so.

Q. 6. That is your understanding, isn't it?

A. Yes, sir.

W. H. MARTIN, sworn for the State of Georgia, to speak the truth, the whole true and nothing but the truth, testified as follows:

360 Direct examination by Mr. DRAKE:

Q. 1. Do you know Mr. C. G. Baugh, sitting right behind you there?

A. Yes sir.

Q. 2. Was he down at your place any time this year, and if so when?

A. He was down at my place some time in June; I don't remember the dates.

Q. 3. What did he claim to be doing there?

A. I met him out in the road there, and he said that he was looking around about this smoke business, to see whether it was doing any damage.

Q. 4. What did you do then, and say to him?

A. Mr. Baugh made some remarks that he didn't see any damage to amount to anything on the timber; and I says "Mr. Baugh come with me and look at my bean patch and potato patch" and he went with me and looked at the beans and potatoes that had all been burned.

Q. 5. What did he say to you?

A. He said that they were damaged, and that I ought to have pay for it.

Q. 6. Who was with you?

A. Mr. George Holloway and Mr. Haskin Holloway.

Q. 7. In whose employment was Mr. Baugh at that time?

A. He said that he was employed by the D. S. C. & I. Co.

Q. 8. Whereabouts do you live?

A. About six miles Southwest of here.

Q. 9. Near what point?

A. Near Burnett in the edge of Gilmer County; about a mile over in Fannin.

Q. 10. Has there been any damage done to the timber over there?

A. Yes sir.

Q. 11. When, this year?

A. Yes sir.

Q. 12. To what extent?

A. Pretty bad.

Q. 13. Have you noticed any dates that the smoke come in there?

A. I noticed it on the 3rd day of June.

Q. 14. Was that the damage you were showing Mr. Baugh?

A. That was the damage when he come in there; then there was some very shortly after he was there.

Q. 15. That was some time the early part of June?

A. Yes sir.

Q. 16. What other date have you seen it since the 3rd of June?

A. July 3rd and 4th, the smoke was in that section.

361 Q. 17. Of this year?

A. Yes sir.

Q. 18. Did you see the effects of it on the stuff after then?

A. Yes sir.

Q. 19. What did it effect down there?

A. You could see the effect on the timber and on the growing crops some.

Q. 20. The potatoes and stuff that you showed Mr. Baugh, what was their condition?

A. It had killed the leaves pretty bad. We will have some potatoes, of course, but the leaves are pretty well all dead and rotting off.

Cross-examination by General FOWLER:

Q. 1. If your potatoes and everything of the kind was killed before Mr. Baugh was in there, they couldn't get killed any more, could they?

A. They got scorched again; at the start they wasn't so much damaged.

Q. 2. They couldn't be killed but once could they?

A. One time it would kill maybe half of them, and maybe the smoke would come in again the next week and kill the balance.

Q. 3. What day was it that smoke come in there before Mr. Baugh come there?

A. June 3rd.

Q. —. Did you put that down?

A. No sir, I just remembered it.

Q. 5. You going to put in a claim for damages?

A. I put in a claim for damages before Mr. Baugh come there.

Q. 6. For this year?

A. Yes sir, with the Farmers' Union people.

Q. 7. You mean you are preparing to bring suit?

A. Yes sir.

Q. 8. How much?

A. Eight Hundred Dollars.

Q. 9. What people you put it in against?

A. The Ducktown Sulphur Company.

Q. 10. You put that in with somebody?

A. Yes sir, with the Farmers' Union people; with the Farmers Union Lawyers.

Q. 11. You have a Union, an organization of the farmers?

A. Yes sir.

Q. 12. And you have lawyers employed?

A. Yes sir.

Q. 13. Who are they?

362 A. Mr. Duckworth is one of them, and Mr. Drake; I don't know the others.

Q. 14. Mr. Drake one of the lawyers for that Farmers' Union?

A. I can't say whether he is or not.

Q. 15. So you have got a Farmers' Union here?

A. Yes sir.

Q. 16. What is that Farmers Union for?

A. It is the farmers' educational union.

Q. 17. And the farmers have taken up this smoke question?

A. Yes sir; we are suing for damages.

Q. 18. They have gone in together and have employed counsel?

A. Yes sir, I suppose so.

Q. 19. That farmers' union exists in Gilmer and Fannin County?

A. There is some in Gilmer; I don't know about Fannin.

Q. 20. You belong in Gilmer?

A. Yes sir.

Q. 21. And you are watching mighty particular to see every little bit of damage to make proof?

A. I have watched it pretty close this year.
Q. 22. Did you watch last year?
A. I have watched every year, but I haven't made any point watch for any particular dates.
Q. 23. Have you been watching that for six or seven years?
A. No sir, I was in North Carolina.
Q. 24. It didn't scorch you any over there?
A. Yes sir.
Q. 25. How far away were you?
A. Eighteen or twenty miles.
Q. 26. From Ducktown?
A. Yes sir.
Q. 27. You have been here how many years?
A. Eight years last March; I left here before that and went North Carolina.
Q. 28. How much land do you own?
A. Two hundred and seventy acres.
Q. 29. You bought that eight years ago?
A. No sir.
Q. 30. When did you buy it?
A. Part of it eight years ago, and part of it since that.
Q. 31. You put in for damage to timber and everything else?
A. Yes sir.
Q. 32. You are going to sue for that?
A. Yes sir.
Q. 33. Have you filed any claim with this arbitration board?
A. Not that I know of.
363 Q. 34. You know that they have in hand fund for distribution among the people for damages?
A. I suppose so, I have heard it.
Q. 35. Haven't you prepared any claim to present to them?
A. No sir.
Q. 36. You are going to fight it out in law?
A. I think that's as good a way as any; I don't think they will anything unless they are made to do it any how.

It is agreed by and between counsel for the State and the defendant that the witness lives twelve and a half miles from Copperhill and fourteen and a half miles from Isabella.

Mileage of witness: 12 miles.

Redirect examination by Mr. DRAKE:

Q. 1. You were asked about the Farmers' Union, I will ask you if that is not a National Organization?
A. Yes sir.
Q. 2. And has been for several years?
A. Yes sir.
Q. 3. And the Mr. Duckworth you speak of he is an officer, a State or a National Officer in the Union?
A. Yes sir.

H. H. HOLLOWAY, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. How old are you Mr. Holloway?
A. Forty-three, I guess.
Q. 2. Where do you live?
A. In Gilmer County.
Q. 3. Near what point?
A. Near Burnett?
Q. 4. Which way, and how far from that point?
A. About a mile I guess Southwest from there.
Q. 5. Do you know Mr. C. G. Baugh?
A. Yes sir.
Q. 6. Is that him sitting there (Indicating)?
A. Yes sir.
Q. 7. Did you see him at any time in Gilmer County, and if so when?
A. I see'd him down there; I don't know exactly the date.
Q. 8. Who was with you?
A. Bill Martin and George Holloway.
364 Q. 9. If there was anything said about smoke damage on that occasion, tell what was said; what Mr. Baugh said?
A. Bill Martin got Mr. Baugh to come and look at some of his stuff that was damaged, and Mr. Baugh told him that he thought that he ought to have pay for the damage; he said that he was looking out for timber and didn't have anything to do with that or something of the kind.
Q 4. That garden truck, he said he had nothing to do with?
A. Yes sir.
Q. 5. Do you remember what month that was in?
A. No sir, I don't; It must have been the last of June or the first of July.

Mileage of witness; 12 miles.

G. W. HOLLOWAY, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. How old are you Mr. Holloway?
A. I will be forty-six if I live to see the 4th of October.
Q. 2. Near what point do you live in Georgia?
A. I live in the North part of Gilmer County, on the Ellijay and Ducktown road, about a mile from the Fannin line.
Q. 3. Near what post office or station on that road?
A. My post office is Burnett, Georgia.
Q. —. Do you live East of Burnett?
A. I live due South of Burnett about a mile.

It is agreed by and between counsel for the State and the de-

fendant, that the witness lives thirteen and a quarter miles from Copperhill and fifteen and a quarter miles from Isabella.

Q. 5. Do you know Mr. C. G. Baugh?

A. Yes sir.

Q. 6. That the gentleman sitting right behind you (indicating)?

A. Yes sir, that's him.

Q. 7. Has he been down in your neighborhood this year? If so, when?

A. He was down there, but I can't give the date he was there.

Q. 8. What was he doing down there?

365 A. He said that he was looking for damages for the D. S. C. & I. Company.

Q. 9. Did he say that he was working for them?

A. Yes sir.

Q. 10. What did he have to say about them?

A. He said that the D. S. C. & I. Company was paying him Five Dollars a day and expenses, and he said that the T. C. Company offered him Six; but that he wouldn't work for the T. C. Company.

Q. 11. Did you see him shown any damage and hear what he said?

A. Yes sir, I was there, and Mr. Martin took Mr. Baugh to his garden and showed him some irish potatoes and some beans and Mr. Baugh said "Your garden is damaged, and you ought to have some pay for it; you ought to have damages."

Q. 12. Do you know when that was?

A. It was some time in June, is the best of my recollection; I can't tell you when.

Q. 13. You don't remember the date?

A. No sir.

Q. 14. Did you see that damage you are telling about?

A. Yes sir.

Q. 15. What kind of damage was it?

A. The irish potato tops was crisped and scorched, and so was the beans.

Q. 16. Had you seen any smoke in there before that?

A. It was there on the second and third of June, to the best of my recollection. Heavy smoke in there.

Q. 17. That this year?

A. Yes sir.

Q. 18. Could you see it?

A. Yes sir.

Q. 19. Could you smell it?

A. Yes sir.

Q. 20. Have you seen it in there any more this year?

A. I don't remember whether I have saw it any more than that time.

Q. 21. Have you observed any damage to the forests this year, or last year?

A. Last year, you say?

Q. 22. Any damage this year or last year?

A. I haven't been in the mountains; I haven't been off of my place this year; my forest is not as bad this year as common.

Q. 23. Was it burned any last year?

A. Yes sir, it was burned; the leaves turned yellow, and fell of-.

366 Q. 24. Did they turn yellow and fall off before the right time?

A. Yes sir.

Cross-examination by General FOWLER:

Q. 1. Last year you had a drouth in August and September that killed the trees in the forests, or was that year before last?

A. I don't remember that.

Q. 2. Didn't you have a heavy drouth down through here?

A. It seems that last year was very dry in the fall season; but I don't remember how that is.

Q. 3. Wasn't that in August last year?

A. I wouldn't swear that it was in August, because I can't tell about that at all.

Q. 4. Do you remember how it was year before last?

A. I don't.

Q. 5. You don't remember how it was any time before last year?

A. Yes sir.

Q. 6. Do you remember how it was six or eight years ago?

A. Yes sir.

Q. —. How was it, bad?

A. Yes sir.

Q. 8. It is very much better now than then?

A. My forest is better than it was then; I can't say about the others, I haven't been out.

Q. 9. You give attention to your own property?

A. I have been at home; I don't know how it is on the mountains.

Q. 10. Have you ever been in Ducktown?

A. Yes sir, I worked in Ducktown about five years. I quit the first of last June. I think I worked there fourteen months; I commenced in March 1912, the last day of March, and I quite there, I believe, June of last year, 1913.

Q. 11. Who did you work for?

A. The D. S. C. & I. Company.

Q. 12. Did you ever work for them before that?

A. Yes sir.

Q. 13. When was that?

A. I can't tell you how long; that has been a long time ago and I would have to guess at the time; I haven't got the dates and I don't know, but it has been something like fifteen years ago; just guessing at it.

Q. 14. At that time the Tennessee Copper Company wasn't operating was it?

A. When I was working there then the Tennessee Copper Co. was building its plant.

367 Q. 15. Did you stay there until after the Tennessee Copper Company begun operating its plant?

A. It seems that I was there.

Q. 16. That is a very much larger concern than the Ducktown plant, isn't it?

A. Yes sir, I think so.

Q. 17. Do you remember when they erected that high stack?

A. I wasn't there.

Q. 18. Living down where you are now?

A. Yes sir.

Q. 19. Don't you know when it was erected?

A. Yes sir.

Q. 20. What is it that is scorching your timber?

A. I can't swear about that; I would like to be able to tell about that drought, but that is something I can't swear about point blank.

Q. 21. Don't you know that it was after the erection of that high stack that your timber began to be scorched?

A. I don't remember about our timber being scorched until they cut out roasting that ore; when they begun to run it through the furnaces green is the first I noticed; it hurt from that time.

Q. 22. It was six or seven years ago before your timber began to scorch badly?

A. I can't tell you exactly.

Q. 23. Isn't that your best judgment, that six, seven and eight years ago, it began to scorch badly?

A. I can't say about that; it would be guess work; I want to give you the exact truth about it, and I can't guess it; I don't remember how many years it has been.

Q. 24. It hasn't been over eight years has it?

A. I think something like that, just guessing at it, if you count that as evidence; I guess it would be something like seven or eight years ago. I never noticed the timber dying until they stopped roasting the ore and commenced to run the green ore through the furnaces.

Q. 25. Your best judgment is that you first noticed it seven or eight years ago?

A. It was when the- commenced running the green ore through the furnaces; if you know how long that has been you can get the time.

Q. 26. Do you know when they put in those acid plants?

368 A. I have an idea when the- put them in.

Q. 27. Have you worked there since that time?

A. Yes sir. I worked there, I told you, in 1912 and 1913.

Q. 28. You know that since these acid plants have been put in, it has been very much better on your place?

A. It has been better there on my place this year than it has been, but ever since they put up the stacks there the timber has been scorched bad.

Q. 29. What year was that?

A. Up until a couple of years ago.

Q. 30. For the last two years it has been very much better than it has been since the time you mention?

A. Yes sir, there on my place it is better than it has been. My place, so far as I have noticed it shows the least at this time. I don't know though, it's pretty early for it to begin to show up on us down here; I don't know what it might do later on. My timber is better right now than it was last year.

Q. 31. Did you file any claim for damages?

A. Yes sir.

Q. 32. Who with?

A. I filed a claim with—I can't tell you the names of the lawyers.

Q. 33. Lawyers in Atlanta?

A. Yes sir.

Q. 34 That is, you contemplate bringing a suit?

A. Yes.

Q. 35. Which companies are you going to sue?

A. I can't say; I just put in my claim with them.

Q. 36. They are to sue whichever company they see fit, or both of the companies?

A. Yes sir, both companies, if they see fit.

Q. 37. How much do you claim that you are damaged?

A. I don't know; I haven't swore to no damage at all.

Q. 38. How much do you think that you are damaged?

A. Its hard for me to tell. I can't swear at all; if I wasn't on oath, I could make a guess with you as to the damages.

Q. 39. Don't you know that if you ever get any damages you will have to swear to it on oath?

A. If I have to swear just what it is, I won't get no dam-
369 ages, because I can't swear how much I am damaged; I wouldn't swear a lie if I never got a copper.

Mileage of witness: 13 miles.

C. J. TRAMMEL, being sworn to speak the truth, the whole truth and nothing but the truth, testified:

Direct examination by Mr. DRAKE:

Q. 1. Where do you live?

A. In Georgia, Fannin County, two miles South of here.

Q. 2. How old are you?

A. I am going on sixty-two; I will be on the 22nd of this month.

Q. 3. How long have you lived in the neighborhood in which you now live?

A. I have lived there all my life, except fourteen years in the West.

Q. 4. How long have you been there the last time?

A. Twenty-three or four years.

Q. 5. How much land do you own in that neighborhood?

A. Eight hundred and forty-two acres.

Q. 6. Have you, in the last few years, seen any sulphur smoke in your neoghborhood?

A. Yes sir.

Q. 7. How much and how often?

A. Very frequently; it's in there every time the wind sets from the North and the Northwest.

Q. 8. Have you observed any smoke damage in your neighborhood in the last few years?

A. Yes sir.

Q. 9. Beginning last year, did you observe any smoke in there last year?

A. Yes sir.

Q. 10. Did you see any damage that it did?

A. Yes sir.

Q. 11. Seen any after you smelled it in there?

A. Yes sir.

Q. 12. How many times?

A. Numbers of times.

Q. 13. How will it effect the forest trees, the leaves on them when it comes in there?

A. Well sir, it will turn them brown and effect them some-
370 thing like they have come in contact with heat; turns them a brown looking color.

Q. 14. When it parches these leaves, do they hang on for the balance of the year, or how do they do?

A. No sir, they drop off; shed off.

Q. 15. When?

A. They will shed at different times; owing to when they are effected; when they are effected, they will drop off.

Q. 16. Have you ever seen them falling off before the right time of the year?

A. Yes sir.

Q. 17. What months?

A. I have seen them falling off through June, July and August.

Q. 18. What years,—last year?

A. Yes sir.

Q. 19. Have you seen any smoke this year?

A. Yes sir.

Q. 20. To what extent have you seen it?

A. I have seen it; more of it this year and more effects this year than for three years past.

Q. 21. What effect did it have on your forest?

A. It scorched the foliage of the trees; it struck the timber and done the most damage when the foliage was tender; it scorched the young twigs and the leaves.

Q. 22. What months you see that in. May?

A. Yes sir.

Q. 23. June?

A. Yes sir.

Q. 24. July?

A. Yes sir.

Q. 25. Have you seen any this month, August?
A. Yes sir.
Q. 26. What varieties of the trees does it injure up there in your forests?
A. Different varieties: Spanish Oak, Black Oak, particularly on that class of timber, and pines.
Q. 27. How much of your lands are in timber, and about how much in cultivation?
A. Seven hundred and fifty acres of timbered lands.
Q. 28. Has it been through that timber for the last few weeks?
A. Yes sir.
Q. 29. Did you observe the condition?
A. Yes sir.
Q. 30. How is it?
A. There is dead timber all over the forests; there is more dead trees that died this season than there has been for several
371 years back.
Q. 31. Coming down to July of this year, did you see any smoke in there in July, if so state what dates?
A. Yes sir, it was in there on the 3rd and 5th of July.
Q. 32. Where was you on the 3rd of July?
A. I was at home.
Q. 33. To what extent did you see it in there on your timber?
A. I seen it in there bad, all over the country there.
Q. 34. Was it much bad?
A. It was in there strong enough to be smelt.
Q. 35. On the 5th of July did you see it, and where was you, and where did you go that day?
A. I went to an orchard I had on the mountain there.
Q. 36. Which way did that mountain face?
A. It faced West from where I live.
Q. 37. How far away?
A. Mile and a quarter, about that.
Q. —. Who was with you on that trip?
A. Mr. Bennett and Mr. Thomas and we met up with Mr. Sebolt coming down on this side of the mountain.
Q. 39. Mr. Sebolt here today as a witness?
A. Yes sir.
Q. 40. On that trip on the 5th of July, were you where you could look across into the Ducktown basin?
A. Yes sir.
Q. 41. Where you could see these copper plants?
A. We could see where they was at.
Q. 42. If you looked over that way, what did you see?
A. We seen the smoke coming out of the basin and drifting out in the direction we was at.
Q. 43. You could see it on the mountains around you and on the hills?
A. Yes sir.
Q. 44. Could you smell it?
A. Yes sir.

Q. 45. Did you observe any damage soon thereafter in the forests or on your garden truck, where you said you saw it on the 3rd?

A. On the 4th there I noticed the foliage on the fruit trees there close to the house; it scorched the young twigs up; the tomato

372 plants and garden beans and vines.

Q. 16. Had these beans and tomatoes and fruit trees been all right before that?

A. Yes sir.

Q. 47. That showed up on the fourth?

A. Yes sir.

Q. 48. And you saw the effects on the 4th?

A. Yes sir.

Q. 49. Do you raise any corn crops or pea crops and things of that kind?

A. My tenants do.

Q. 50. Have you noticed them kind of crops in the last few years?

A. It was on them last year, and this year.

Q. 51. What effects have you seen this year and last year?

A. Last year it effected them worse than it has so far this year.

Q. 52. To what extent was it damaged last year?

A. It was damaged pretty heavy last year.

Q. 53. How much corn did you get off your place last year by your tenants?

A. They made something between three and four hundred bushels.

Q. 54. How many acres?

A. I don't remember how many acres; they generally have twenty to twenty-three acres.

Q. 55. How much of that 20 to 23 acres was bit and burned by this smoke?

A. There was signs all over it.

Q. 56. In what way was the corn effected?

A. In spots; it effects the fodder, the silks and the tassels on the corn.

Q. 57. Did you notice any effects last year on your fodder?

A. Yes sir.

Q. 58. Did you see any of the effects last year on your orchard?

A. Yes sir.

Q. 59. How many acres of orchard have you?

A. Fifteen acres in one orchard; then I planted out seventeen hundred trees in two other places; I don't know how much is in that.

Q. 60. How much of that orchard was bit by the smoke?

A. Principally the whole orchard was effected.

Q. 61. How is it this year?

A. It's the same *was* this year; there is heavier damage this year than last.

373 Q. 62. Which way from where you live, is that orchard?

A. It's west of the lot I am on. I live on lot 29.

Q. 63. That orchard you speak of lies West of you?

A. Yes sir.

Q. 64. How far west from where you live?

A. It's a mile and a quarter.

Q. 65. On that mountain on which you stood and looked over into the Ducktown basin and saw that smoke coming out?
A. Yes sir.

It is agreed by and between counsel for the State and for the Defendant that the witness lives 11½ miles from Copperhill, a little East of South, and 13½ miles from Isabella.

Cross-examination by General FOWLER:

Q. 1. Do you belong to the Farmers' Union?
A. No sir.
Q. 2. Have you put in a claim for damages?
A. No sir, I have got a suit against the copper company.
Q. 3. How long has that suit been pending, a good many years?
A. It is dated March 1906; three years up to 1908.
Q. 4. That suit against the Ducktown Company?
A. Yes sir, the Ducktown Company and the Tennessee Company.
Q. 5. The damages began in 1906, and the suit is for that time up to 1908?
A. Yes sir, my damages begun in 1905 and 1904 to 1908.
Q. 6. You brought the suit in 1906?
A. No sir, I brought it in 1908, March 1908, I think and went back three years; that was as far back as we could go.
Q. 7. You went back then to 1905?
A. Yes sir, three from eight leaves five; it covers the growing season- of 1906, 1907 and 1908.
Q. 8. Then the suit was filed in March, 1909?
A. Yes sir, that's the way the suits is filed.
Q. 9. You have been watching ever since to see if you couldn't sue for more damages?
A. No sir, I went down for the purpose of suing, but I couldn't get into the court; the lawyers didn't want to take any more suit-.
374 Q. 10. When did you go down to sue again?
A. I went down when the time was up and I could sue for three years back.
Q. 11. Who was the lawyer?
A. Mayfield.
Q. 12. Have you gone in with these Georgia men to have their suits brought?
A. No sir.
Q. 13. Have you filed any claim with this commission?
A. No sir, I haven't filed any claim; only that suit.
Q. 14. You know there is a fund out of which you can get damages, don't you?
A. No sir, I don't know anything about it.
Q. 15. In the hands of this board of arbitrators?
A. Yes sir, but I didn't put in no claim.
Q. 16. If you have suffered damage, why didn't you put your claim in?
A. Because, I don't propose to take no such thing as that.

Q. 17. Have you sold any timber off of your land?
A. No sir, I own a saw mill there myself.
Q. 18. How long have you been running a saw-mill?
A. I have been sawing there for about twenty years.
Q. 19. How many years have you been running a saw mill on that seven or eight hundred acres you own?
A. Off and on for twenty years.
Q. 20. How many thousand feet have you taken from it?
A. Six or seven hundred thousand.
Q. 21. How much is standing there yet?
A. I don't know how much is standing there yet; there has been destroyed something over a million feet.
Q. 22. You cut the trees and left the laps in the woods?
A. Yes sir.
Q. 23. Don't you know that cutting the trees destorys a good deal of the timber?
A. No sir, we are always careful about felling timber not to destroy the other timber.
Q. 24. Forest fires been through your tract?
A. No sir, there have been some wood fires through some portions of it.
Q. 25. Don't these fires burn up the laps of the trees and destroy other timber?
375 A. It destroys some of the young timber in places.
Q. 26. Do you know anything about the diseases of timber?
A. I have heard a great deal about the diseases of timber.
Q. 27. Have you ever studied it?
A. Well, I know that whenever you put diseased timber in contact with other timber, it will disease the other timber.
Q. 28. Don't you know that the dead laps lying in the woods will breed diseases to the different kinds of good timber surrounding it, like one man will take a disease from another?
A. No, I don't know that; I have buried up young forest trees with the laps of other trees, and these young trees grow healthy and all right.
Q. 29. You don't mean that you covered them up with the laps?
A. All around the roots of them.
Q. 30. Now, Mr. Trammel, you said that you saw smoke from the Ducktown basin I believe on the 3rd of July?
A. I didn't say that. I said I saw it on the 3rd of July; I don't know where it come from on the 3rd of July. I seen it in the field down there below where I live.
Q. 31. On what day did you see it coming from the Ducktown basin?
A. The fifth of July.
Q. 32. Where were you?
A. On this mountain back here in that orchard.
Q. 33. What was it that you saw?
A. I saw smoke coming out from that basin and drifting in this direction.

Q. 34. Coming from the Ducktown basin?
A. Yes sir.
Q. 35. Didn't you see ten or twelve stacks there from which smoke was coming?
A. I saw several stacks there; stacks to the other plants.
Q. 36. Furnace stack and out of the power plant stacks?
A. Yes sir.
Q. 37. Then there are a number of stacks from the various mines around there; isn't that true?
A. Yes sir, stacks all around there.
Q. 38. So, when the wind is from a certain direction the smoke drifts and is carried from eight or a dozen stacks?
376 A. If they were all in operation it would, yes sir.
Q. 39. All are in operation a good part of the time?
A. I don't know about that; I can see the fumes coming out from the basin.
Q. 40. Anyway, you saw a heavy smoke coming out of the basin on the 5th?
A. Yes sir.
Q. 41. And how many stacks were emitting smoke, you don't know?
A. No sir, I could see the smoke coming from the basin.
Q. 42. From what stacks it was coming from, you don't know?
A. No sir; it was from right where the plant is; right in the location of the acid plant and smelters there; we could see it come out and the volume rise up into the air.
Q. 43. When did the first smoke come in there this year?
A. I don't know.
Q. 44. Was it this Spring after the vegetation came out?
A. It come in there in April.
Q. 45. Did you smell it?
A. Yes sir.
Q. 46. Do you smell it every time it comes in there?
A. No sir, not every time; sometimes it is scattered by the winds and is weakened.
Q. 47. Did it come in there in May?
A. Yes sir.
Q. 48. What time?
A. I don't remember, something along about the first of May it come in there.
Q. 49. Can't you tell any dates in May?
A. No sir, I didn't keep any track of it.
Q. 50. You never did keep any track of it did you?
A. No- until this smoke in July.
Q. 51. How come you to keep track of that?
A. I knowed it was the fourth; I seen this here damage done there by the smoke the day before.
Q. 52. What day was the fourth of July—did you go to the picnic?
A. No sir, I was at home.
Q. 53. You stayed at home on the fourth?

A. Yes sir.
Q. 54. Stayed at home on the 3rd?
A. Yes sir.
377 Q. 55. Stayed at home on the second?
A. I don't know whether I was at home on the second or not.
Q. 56. You just stayed around home, and knowed it was the fourth?
A. Yes sir; don't you suppose a man can keep track of the 4th of July?
Q. 57. What was you doing at home on the 4th, celebrating?
A. I celebrated at home.
Q. 59. You didn't celebrate the fourth looking out for smoke did you?
A. No sir.
Q. 60. Was it in there on the 30th of June?
A. I never noticed.
Q. 61. Was it there on the 29th of June?
A. I didn't notice.
Q. 62. Was it in there on the 28th of June?
A. I didn't notice any then.
Q. 63. You didn't notice any the latter part of June at all, did you?
A. No, I don't remember.
Q. 64. Notice any the middle of June?
A. Yes sir.
Q. 65. Any smoke in there the first of June?
A. Yes sir. The Tennessee people was shut down the latter part of June?
Q. 66. How do you know?
A. I was by there and went to Knoxville, and saw that they were shut down, and after I come back home, I seed smoke in there.
Q. 67. When was that?
A. I don't remember when it was.
Q. 68. You remember the 3rd day of July, and can't remember when you went to Knoxville?
A. No sir.
Q. 69. When had you been to Knoxville before that?
A. Several years; ten years I reckon.
Q. 70. You can't remember when you went to Knoxville, and yet you can remember the 3rd day of July?
A. Yes sir.
Q. 71. Who have you been talking to about this case, and about your testimony, Mr. Vestal?
A. I have spoke to him about it, yes sir.
Q. 72. You and he have gone over this case together, haven't you?
A. No sir, we haven't been talking anything particular
378 about the matter; we have been talking about what we have seen.
Q. 73. When did you tell him that?

A. I don't remember; the other day.
Q. 74. Have you been talking to Mr. Shippen about it?
A. I have been talking to one of them; not this man here.
Q. 75. You lumber fellows are standing in on this thing aren't you?
A. Not that I know of in particular; we are trying to fight for our rights; each one of us.
Q. 76. Any way, your tract has been damaged there in June of this year?
A. Yes sir.
Q. 77. Just burned down before July wasn't it?
A. It was seriously bit some of it; the orchard was damaged seriously in April and in May.
Q. 78. Fire went through your orchard a year or two ago, didn't it?
A. It went through a portion of it; only a little.
Q. 79. It didn't hurt it though, did it?

Mr. DRAKE: We except to the question for the reason that this testimony has already been gone over by General Fowler.
Exception overruled.
Appeal prayed and granted.

Q. 80. It didn't hurt your orchard for the fire to go through?
A. Well sir; some fire got into my orchard; there was six trees, I believe that was destroyed; some parties let fire get into one corner of my orchard.
Q. 81. When was that?
A. Year before last.
Q. 82. Didn't you have a drouth through there last year?
A. Not anything serious.
Q. 83. This year, didn't you have about six weeks of the hottest and dryest weather you ever saw for the season in this country?
A. No, I don't think so. There was six weeks that we didn't have any rain.
Q. 84. You did have a dry spell, a very dry spell?
A. Yes sir, we had a dry spell. We had a spell that just suited our crops during May and June.
Q. 85. During what months does your corn grow down here?
379 A. It grows all through the summer season.
Q. 86. When do you plant it?
A. At different times, whenever you get ready; generally we plant in April.
Q. 87. That comes up about the first of May?
A. Some of it does, yes sir.
Q. 88. Your corn does its principal growing during the months of May and June?
A. Oh no; it just gets started; it takes practically the whole season to make it; it takes until September.
Q. 89. When do you lay your corn by?
A. We lay by at different times.

Q. 90. Don't you lay by the last of June?
A. July and August, sometimes the first of August.
Q. 91. You mean to say that you plant corn in April and don't lay it by until August?
A. Sometimes, yes sir; in July and August.
Q. 92. Isn't that corn well grown by the first of July, up over a horse's back by the first of July?
A. When it is planted in April, it is generally silking and Tasseling by the first of July.
Q. 93. You don't think about plowing corn when it is that high?
A. Yes sir, we plow it when it is higher than that.
Q. 94. You do that after it silks and tassels?
A. If we don't lay by, we work it that late.
Q. 95. How long has your land been cleared?
A. Fifteen or sixteen years, some of it twenty or thirty.
Q. 96. Upland or bottom land?
A. Upland and bottom land too.

Redirect examination by Mr. DRAKE:

Q. 1. You were asked about bringing suits over in Tennessee that hadn't been tried, I will ask you if the reason isn't that the court at Ducktown is so crowded you can't get a trial?
A. Yes sir.
Q. 2. So many cases on the docket?
A. Yes sir; and has been for several years. They just hold the court to try criminal cases, and the civil docket dismissed; they don't try nothing but the criminal business over there.

380 Recross-examination by Mr. FOWLER:

Q. 1. Don't you know it to be a fact that the attorneys for the Ducktown Company was there to try the cases and was clamoring for a trial, and that the attorneys for the plaintiff's wouldn't try them; that they would dismiss them before they would try them at all?
A. No, I don't know that.

Mr. DRAKE: We except to the question, because no facts have been stated on which to base the question.
Exception overruled.
Appeal prayed and granted.

The next witness, E. B. CLARKE, having first been duly sworn, testified as follows:

Direct examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. What is your age?
A. Thirty years.
Q. 2. What is your profession?

A. I am a forester with the United States Government.

Q. 3. You are with the Department of Forestry, Bureau of Forestry?

A. Yes sir.

Q. 4. Department of Agriculture?

A. Yes sir.

Q. 5. How long have you been in that service?

A. A little over five years.

Q. 6. Where are you stationed now?

A. At Blue Ridge, Georgia.

Q. 7. How long have you been stationed here?

A. Been stationed here permanently two years. Off and on over three years.

Q. 8. Do you know Dr. Hedgecock?

A. I do.

Q. 9. State whether or not you accompanied him on a trip of investigation this week and last week?

A. I did.

Q. 10. How many trips did you make?

A. We have made four trips all together, last Friday, Saturday, Monday and made one Thursday, I believe, but it didn't have anything to do with this.

381 Q. 11. Where did you go on your Friday trip?

A. We went this main road between here and Copperhill, to Copperhill and from there to Ducktown and back to Copperhill, and then went to Epworth, Georgia, and then returned to Blue Ridge.

Q. 12. Where did you go on the second trip?

A. We left here and went to Epworth and then to Madola and then to a farm house where a Mr. Barnes lives and then up on Barnes Mountain to the top, then returned by way of Madola and Pierceville. We went to Granny Marr Mountain returning to Pierceville and then to Copperhill and then to Blue Ridge.

Q. 13. Then on the next trip where did you go?

A. Monday we went to Ellijay and west east from Ellijay and returned.

Q. 14. How many miles would you say you have covered on all those trips?

A. The first day we covered about fifty miles, the second day we covered about sixty five, and on Monday we covered about forty five?

Q. 15. Did you notice the conditions of the forests on those trips?

A. I did.

Q. 16. Could you state what that condition was, describing it if you will?

A. In comparison with other lands?

Q. 17. First, just describe it.

A. Well, in around south of Copperhill on the Georgia side, southwest of there, the forests are all of very — nature, and have to a certain extent been killed and damaged.

Q. 18. What is the appearance of the trees and foliage?

A. A great many of them are stained and browned and scorched, and in a dying condition.

Q. 19. What is the appearance of the trees, the leaves of the trees as to what has caused that scorching and searing, if you know?

A. I examined several of the trees,——

Q. 20. You are not an expert botanist? You are a forester?

A. I had Dr. Hedgecock examine them and he claimed they were damaged by——

By COUNSEL FOR DEFENDANT: Don't state anything that Dr. Hedgecock said.

382 Q. 21. Did the trees appear to have been in that condition for a great length of time or for a short period of time, or both?

A. Some of the leaves have been recently killed, probably within the last two months, while others and other parts of the trees have been damaged previously in the past year, and maybe six or eight years.

Q. 22. To what extent—what was the extent of the timber which was damaged, I mean did it or not extend over the territory covered by those various trips?

A. On each of the trips there was a great deal of damaged timber to be seen on all sides.

Q. 23. Now, you started a moment ago to compare that with other forests, you may do that.

A. It is very inferior compared with forests just east of here, which I have been purchasing and examining the past three years.

Q. 24. You were purchasing that for the Government?

A. Yes sir.

Q. 25. Is that in a healthier or more sickly condition than the forests out here?

A. It is far more healthier.

Q. 26. State whether or not that is in the same sort of country as the forests here?

A. Topographically, yes sir, practically the same.

Q. 27. State whether or not the same climatic and topographical and geographical conditions exist there in the forests that exist here?

A. They do, only fifteen to forty and fifty miles east of here.

Q. 28. What then, is the only difference in the conditions as far as you can judge?

A. The great difference is on the portion south of Copperhill, which is badly damaged.

Q. 29. I mean what is the difference in climatic conditions and topographical conditions, if anything of that kind, is there anything preesnt here which *is not present here, which* would tend to injure the forests?

A. No sir, the topographical and climatic conditions are the same.

Q. 30. How far is the forests over there from these copper plants?

A. The nearest point is about twelve miles air line, extending from that to fifty miles.

383 Q. 31. To the southeast?
A. Yes sir, southeast.
Q. 32. Have you ever seen the smoke there from these plants on that property?
A. Yes sir, I have.
Q. 33. How long ago?
A. I have two days on my note book, if that is permissible.
Q. 34. About how long ago?
A. Around June 20th, around June 10th is one day. It was very dense, I rode up the canyon just after a shower, and when I got up there where the rangers were stationed, where I had ten men employed, after lunch the smoke came in so dense and thick I started out some guards to look for fire.
Q. 35. State what you did?
A. I sent two men to the top of the mountain to look *by* fire and by the time they returned the wind had shifted to the west and it cleared the camp.
Q. 36. How long did it stay in there?
A. About three hours.
Q. 37. Have you ever seen smoke in this section through here?
A. I have.
Q. 38. Have you ever noticed the timber and crops after the smoke had been on them?
A. I have not, particularly.
Q. 39. You never examined them?
A. No sir.
Q. 40. What day were you out with Dr. Hedgecock up here—did you go up on Barnes Mountain, the top of the mountain?
A. Yes sir, on top of the mountain.
Q. 41. Did you look over the Ducktown Basin and the plants?
A. I did with a field glass.
Q. 42. Could you see the plants?
A. From Barnes mountain we could see the Copperhill plant and stack but could see the Ducktown plant but not the stack, it looked like about a foot of the stack over the building from there. From Granny Marr Mountain the stack of the Ducktown plant was visible, just a little northwest of the plant.
Q. 43. The stacks of both plants were visible?
A. Yes sir.
Q. 44. State whether or not you saw any smoke coming out of the plants?
A. Yes sir, large volumes.
384 Q. 45. What was the volume coming out of the Tennessee Copper Company's stack, as compared with the volume coming out of the other?
A. Both about the same.
Q. 46. The Ducktown Copper Company's stack and the Tennessee Copper Company's stack?
A. Yes sir.
Q. 47. Which direction was the wind blowing that day?

A. Blowing to the west at that particular time.
Q. 48. Could you see the smoke traveling?
A. Yes sir, right across toward Frog Mountain.
Q. 49. That is in Tennessee?
A. Yes sir, in Tennessee.
Q. 50. North of the position you occupied?
A. Yes sir.
Q. 51. How far did that smoke travel from there, if you could tell?
A. It banked against Frog Mountain.

Cross-examination.

By COUNSEL FOR DEFENDANT:

Q. 1. Are there not from ten to a dozen stacks in the Ducktown Basin from which smoke issues?
A. Probably there are, but I only noticed two in operation.
Q. 2. The two stacks of the furnaces and the stacks from the power houses are there not?
A. I should judge there are.
Q. 3. There are several mines in the basin?
A. Yes sir.
Q. 4. Of course, each mine has a power house and each one emits smoke, is that true?
A. Most likely it is, but the stacks which are most prominent are the stacks of the two plants.
Q. 5. The stack of the one plant is not near so prominent as the other?
A. No, it is not, it is not as high.
Q. 6. Is not the Tennessee stack 190 feet higher in the atmosphere than that of the Ducktown plant?
A. Probably it is, I have not figured it.
Q. 7. It is very much larger too, is it not?
A. Yes sir.
Q. 8. You don't know which one of them really produces the most smoke?
385 A. I do not.
Q. 9. You have no knowledge as to the amount of material consumed in the two plants, that is, relative amounts?
A. No sir.
Q. 10. You are not a chemist?
A. No sir.
Q. 11. You know nothing about the content of the ores?
A. No sir.
Q. 12. Relatively, how much more copper fumes in the smoke which comes from one than the other, of course, you don't know?
A. No.
Q. 13. Now, how long have you been in the forest service?
A. A little over five years.
Q. 14. Where did you get your education for that work?
A. Mostly in the field.

Q. 15. Did you ever attend any forestry school?
A. No sir.
Q. 16. Where were you first engaged in the work?
A. In California.
Q. 17. Did you ever read any works on *the* forestry?
A. Continually for the past five years.
Q. 18. Which works have you read?
A. Graves and Sargent and Schenck.
Q. 19. Is it not a fact that the Germans are the greatest experts on forestry?
A. They are so considered. I wouldn't say they are the greatest, but they are considered the foremost in forestry.
Q. 20. Have you read any translation of the German work?
A. I have in bulletins.
Q. 21. Do you understand German?
A. No, I don't read German.
Q. 22. How long have you been stationed here?
A. Continually for over two years, off and on for over three years.
Q. 23. Have you made any study of injury to forests from sulphur fumes?
A. No, I have not made any study of it.
Q. 24. Have you come in contact with this injury here in these forests, from the furnaces?
A. Only down in this section, not out in my country.
Q. 25. You say not out in your country?
A. Well, I have seen slight damage out there.
Q. 26. Not enough to count?
A. Not such that a novice could detect it.
386 Q. 27. How far is that out?
A. Thirty, forty and fifty miles.
Q. 28. You don't pretend you have any damages fifty miles.
A. I couldn't say we do. The people in that section claim that they have, but I have never made a study of the trees that are dead to find out.
Q. 29. People in a radius of seventy and one hundred miles claim their timber is being killed and the leaves browned by smoke?
A I never heard of any claim of smoke damage further east than Blairsville section, about forty miles.
Q. 30. You don't know what the trouble is?
A. They claim it is smoke effects up in there, Blue Ridge Mountain goes northeast of there and they claim the smoke comes in and banks up against the Blue Ridge Mountains.
Q. 31. But I say what may be the matter with any kind of vegetation or trees you have no idea?
A. No, sir.
Q. 32. You are not a botanist?
A. No, sir.
Q. 33. Have you made any study out here of any measure to protect the forests against smoke injury?
A. (No answer.)

Q. 34. Have you made any study of measures to protect forests against smoke injury?

A. I don't know that I have made any study of measures to protect them—I don't know that I have done so—possibly I could answer more intelligently if I knew just what you meant.

Q. 35. Suppose you answer it as you want to, you may know better how to answer it?

A. I don't know that I have taken any measures to protect it.

Q. 36. Have you made any study at all of how the forests can be protected against smoke injury?

A. The only way I ever read of would be to close the plants down like they have in the west.

Q. 37. I will read you from Elements of Technical and Legal Measures Against Smoke Injury, by Dr. Wislicenus, as follows: "The concentration or dilution i. e., the proportion of injurious to indifferent constituents is of decided significance in determining their effect. The greater the amount of acid to each cubic meter of smoke, the more difficult it becomes for the wind to bring it to harm-
387 less dilution, and the greater the distance and time required to bring this about. But where is this limit? This is an uncommonly difficult or scarcely soluble problem, but none the less important. It is soluble only to a certain degree and with certain premises granted. Stockhardt, Schroeder, Weiler, Sorauer and Remann and I have endeavored to come at the question experimentally. As a test plant in producing these artificial smoke injuries, the spruce was used for the most part; and correctly, because it is best adapted to the purpose, and is a woody plant typically sensitive to smoke."—Is it not your experience that fruit is very susceptible to injury?

A. Yes, sir.

Q. 38. "The former experimenters have worked with very primitive apparatus, and since their experimental plants were exposed to too unnatural conditions, the results did not agree among themselves and with the experience of practice. Hitherto Stockhardt's and Schroder's observations have been taken as authoritative, according to which, one volume of sulphurous acid in one million volumes of air applied as 235 fumigations in small glass chambers *is* 60 days caused on the spruce all marks of chronic injury. I have, with the valuable aid of assistants, Dr. H. Sertz, and Dr. F. Schroder, carried out experiments extending over several years, in a specially constructed fumigation chamber which exposes the plants to a constantly renewed air current having an approximately measurable content of acid, and thus far have reached the result, that—Gases, with one volume of sulphurous acid in 500,000 volumes of an indifferent gas, i. e., 0.0002 per cent by volume produced evident chronic injury to young spruces only after the lapse of a whole vegetative season. Besides individual specimens remain still in full vigor, so that we must assume that in nature the harmless degree is attained with this dilution."—Do you know anything about Dr. Wislicenus, is he an authority?

A. I think he is.

Q. 39. Do you agree with what he states in regard to this matter, from a reading of the subject?

388 By Counsel for Plaintiff: We except to the question on the ground, first, there is no evidence in this case on which to base the hypothetical question, as the matter is read into the record and relates solely to this matter, and there is no evidence to show that there is any specimen or condition such as he reads about in this territory. Secondly, for the reason the witness has not qualified as an expert and is therefore not in position to give an opinion on the matters read into the record. Third, for the reason there is no similarity in the conditions in question and those asked the witness, and the conditions in North Georgia.

Overruled. Appeal prayed and granted.

A. I am not a chemist and I wouldn't attempt to express myself on that.

Q. 40. You do say he is an authority on the subject?

A I say I think he is.

Q. 41. I will read further, from the same works, as follows: "This dilution can, as laid down in Chapter II, be entrusted to the wind alone, only when the source of gas outlet is as free as possible on a plain or elevation. In a valley there is no reliance on this natural aid by blowing wind, and among the unfavorable coefficiency of situation discussed under II 3*b*, and C the natural wind current is distinctly inadequate. There special methods of dilution must be resorted to. Among the efforts in this direction, however, I must give expression to the conviction that in the last decade recourse has often been had to a false method. It has been generally thought possible to bring about sufficient dilution of the air by—

"Introduction of the gases into the higher air strata by means of higher stacks.

"One continually encounters this expedient in expert practice, as well *as* approving plans for new establishments as in actions
389 against existing sources of smoke. The above mentioned monograph of Hering recognizes only this method for diluting smelter fumes with large quantities of air. (Hering l. c. p. 40) High stacks. But since high stacks are very expensive and the cost of construction increases progressively with increasing height this method results in the centralization of chimneys into one or a few high stacks. In this hitherto recognized protective measure the Freiberg Smelter Works have accomplished the greatest feat by the construction of the highest chimney in the world at the Halsbruck Smelter. The construction of this gigantic stack over 144 meters (—472.44 ft.) high cost 300,000 marks ($75,000.00). Only people of unusual courage will dare climb to its higher part to test its condition or repair it. As it stands exposed on an eminence and commands the country for miles around, so it gathers the poisonous gases collected from the whole establishment to a distance of miles around. It transfers these gases to the unchecked uniformly flowing upper currents of air which possesses relatively little diluting power, exactly for the reason that they are essentially unchecked

parallel currents without eddies and without pronounced mixing tendency. It- effects were evident on the Tharaudt Spruce forest 10 kilometers (6.2 miles) from the giant stack, until a few years ago the acid content of the smoke was reduced to one half or one third by the above mentioned changes in operation."—Now, according to your observation, since you have been in this section here, is that not what results from the high stack, that it distributes the fumes over a much larger territory?

A. Well, I don't qualify as an expert, and I wouldn't want to express myself as to how the fumes carry.

By COUNSEL FOR PLAINTIFF: We except to that part of the question which was read into the record, certain matter purporting to be a translation, first, because there is no evidence that it is an accurate translation. Second for the reason that it is immaterial.
390 Third, for the reason that the witness has not attempted to qualify as an expert.

Overruled. Appeal prayed and granted.

Q. 42. Don't your common sense tell you that the high stack distributes the smoke much further?

A. Well, I might think so, and it might be possible that it does not.

Q. 43. Do you know anything about air currents at all?

A. I know a little, but I didn't come here to testify along that line.

Q. 44. Did you ever use the Intrement Borer?

A. I have seen it used, personally I have not.

Q. 45. That Intrement Borer is used by the Germans a great deal?

A. That is my understanding.

Q. 46. Do you remember who constructed the Intrement Borer, wasn't it a man named Pressler?

A. He is one of them.

Q. 47. I will read you from —— and Lindell, their works, and will ask you if you agree with them?

By COUNSEL FOR PLAINTIFF: I want to except to the question and to the reading into the record of other matters which purport to be translations upon the grounds as above stated that the witness has continually stated he is not an expert, he has not qualified as an expert, and that read into the record will only tend to encumber and burden it and is useless, and is of no value as to this witness.

Overruled. Appeal prayed and granted.

By COUNSEL FOR DEFENDANT: I have a right to read from scientific works into the record, I don't care whether he knows whether any such follow exists or not. I have already proved this work by Dr. Hedgecock.

Q. 48. "Most to be recommended is the Intrement Borer constructed by Pressler, which was recommended for this purpose by Pressler in 1877. (See Russ) Has frequently used it in his
391 investigations, likewise testifies as to its excellency. More accurate directions for manipulation of the Pressler Intre-

ment Borer is found in Schwapeah Elements of Forestry, page 11."

By COUNSEL FOR PLAINTIFF: We except to that for the further reason that it is not put in evidence and because it is not an accurate translation from the original works.

Overruled. Appeal prayed and granted.

Q. 49. I believe you say you are not a botanist?

A. No, sir, I am not. I would like to answer that for you.

By COUNSEL FOR DEFENDANT: I will cross examine you when they ask you.

Q. 50. Now, Mr. Clarke, you have been over what per cent of the territory in North Georgia?

A. I guess I have been over fifty per cent of Fannin County.

Q. 51. Now, you have stated something about the forests here, something as a matter of fact, a very great part of the forest in Fannin County have been cut over?

A. I would not consider them cut over, they have been culled.

Q. 52. What do you call a cut over forest?

A. I consider when a mill has been in operation, and the timber, all the mature timber is taken off.

Q. 53. That is they have not left anything but the small stuff and under bursh?

A. Yes, sir, I consider that cut over.

Q. 54. Has not a very large part of Fannin County been culled?

A. A large part has, yes, sir.

Q. 55. When you cull a forest you cut down the largest trees?

A. Not always, they usually take out the most valuable species.

Q. 56. In doing that you necessarily leave a lot of limbs or laps in the woods, is that true?

A. Laps?

Q. 57. Yes, sir.

A. What do you mean by laps?

Q. 58. You come from East Tennessee and don't know
392 that, don't you know what the lap of a tree is?

A. You mean the lop and top.

Q. 59. I supposed all North Georgians and East Tennesseeans knew what the lap of a tree was, I mean the limbs and top. You call it lop?

A. Yes, sir, I call it lop.

Q 60. Of course, that dies at once and in a year or two the forest is burned over and it burns the laps or lops?

A. Yes, sir.

Q. 61. That causes much more damage to the timber right around there because those laps will create considerable fire?

A. Yes, sir.

Q. 62. Don't the North Georgia forests, do they not burn over from time to time?

A. Yes, sir, I think all these forests have been burned over at different times.

Q. 63. That necessarily injures the forests?

A. Yes, sir, to a certain extent.

Q. 64. One of the very worst injuries to the forests, here in the forests of the United States, are they not damaged more by forest fires than any other one cause?

A. That is true.

Q. 65. Of course, there are different diseases in the woods?

A. There are.

Q. 66. Are there or not a number of diseases in the forests of North Georgia besides smoke fumes?

A. Yes, sir, I guess in the forests of the country there are some diseases.

Q. 67. Is it not a fact that all the chestnut trees in a great part of the Apalchian regions are dead from a fungus disease?

A. A great many have died and are dying.

Q. 68. Have you ever made any study of that disease?

A. Not particularly, no, sir.

Q. 69. Has your work required you to make a study of the diseases of forests?

A. Not in this section.

Q. 70. So you really have not made any special investigations of the diseases of forests in this country?

A. Only in the definite forests we have purchased.

393 Q. 71. Well, in June you had a forest fire on the Government property, did you not?

A. Yes, sir, a very small one.

Q. 72. How many acres was burned over at that time?

A. About 175 acres of Government land and 50 acres private land.

Q. 73. Of course there are dead trees all through the forests?

A. Yes, sir.

Q. 74. There are dead trees in the North Carolina forests?

A. In all forests.

Q. 75. What species of trees are dying on the Government properties in North Georgia here, north and east?

A. I have not worked north and east the past three years and therefore, I don't know.

Q. 76. What trees were dying previous to that time, in that section principally?

A. North and east, North Georgia, the chestnut has been damaged.

Q. 77. That is supposed to be by a fungus disease, is it not?

A. I think it is.

Q. 78. Are not the white pine dying through that section also?

A. Probably so, but I didn't spend enough time examining the trees in the North Georgia section.

Q 79. Is not the hickory dying some?

A. I didn't investigate it.

Q. 80. You don't know anything about the Cumberland Mountains that is the mountains in Middle and West Tennessee?

A. No, sir, I have never worked there.

Q. 81. Now, coming to this matter of the section around Copper-

hill here, did you ever make any special study of the trees that have been affected by smoke fumes?

A. The last three days, last Friday, Saturday and Monday I was examining with Dr. Hedgecock and Mr. Johnson.

Q. 82. That is the first time you ever had made any study of the effect of fumes on trees, is it not?

A. The first time I was ever through there for that purpose.

394 Q. 83. Before that time you had passed through and glanced at the trees?

A. I had been through several times looking at them.

Q. 84. So you do not now qualify yourself as an expert on the effect of sulphur fumes on trees?

A. No sir.

Q. 85. You wouldn't undertake right now to swear what particular tree has been affected by sulphur fumes and what tree has not, would you?

A. No sir, I would not qualify as an expert from that standpoint.

Q. 86. Don't you know that some times it is practically impossible to state whether or not a leaf or tree is affected by sulphur fumes or something else?

A. Yes sir, without microscopic examination, or test.

Q. 87. Now, is this true, that if that part of Fannin County lying near to Copperhill has all been cut out, nearly all of it,——

A. It has been cut out, but still a lot of timber standing up there.

Q. 88. Beginning right around Copperhill, of course, all that has been cut out and destroyed many years ago?

A. Yes sir.

Q. 89. Is there not very considerable second growth timber now up in that vicinity?

A. None of recent second growth.

Q. 90. What do you mean by recent second growth?

A. No real young trees there.

Q. 91. What do you mean by real young trees?

A. Trees six or seven or eight or ten years old.

Q. 92. Do you mean to say there are no bushes, one or two years old?

A. I didn't say none, but there are not many.

Q. 93. Well, there is a second growth there, how old is it? That which is there?

A. Well, certain portions you will find second growth coming along, but the damaged portion you don't find it.

Q. 94. How near to Copperhill do these conditions exist?

A. Right around there, for four or five miles. I don't say in all directions, but in the northwest and,——

395 Q. 95. Is there not a good part of it where there is a nice second growth coming on?

A. Not on south exposures.

Q. 96. Is there not a considerable portion right through there where you don't see any evidence to-day of injury from the sulphur fumes?

A. Probably a few sections, I wouldn't be able to say, I don't qualify along that line.

Q. 97. Don't you know that right around those furnaces there are gardens that look perfectly thrifty to-day and have been during this whole summer?

A. I saw a few small gardens, I wouldn't say they were thrifty.

Q. 98. Did you examine them?

A. No sir, I saw one corn patch, and I could jump over any stalk in the patch.

Q. 99. Do you know what was the matter with it?

A. It didn't show a thrifty growth.

Q. 100. You have been through parts,—various parts of this country where you have seen corn of that kind?

A. Not to compare with that.

Q. 101. Did you ever see a corn patch that was doing no good?

A. Yes sir.

Q. 102. A thousand miles from here?

A. Yes sir,—not a thousand miles.

Q. 103. Did you ever see anything like that, places where the corn was doing no good a thousand miles from here?

A. No sir. I will have to say right here, the only corn section I have ever been in was in Indiana, Iowa and Illinois.

Q. 104. They don't have anything there but good corn?

A. I have not seen anything but good corn.

Q. 105. You have not seen poor corn patches in Indiana?

A. No sir.

A. No sir.

Q. 106. Now, Mr. Clarke, these smoke fumes don't affect the underbrush and vegetation that grows under close to the soil very much, does it?

A. It affects it right around the section where the sulphur fumes kills it all.

Q. 107. In these parts it has killed that?

A. None there to-day, so naturally it kills what comes along.

396 Q. 108. Will you swear those sulphur fumes killed it this year, is it not a fact that soil has been stripped of all vegetation for a number of years, and it will not produce anything?

A. You said it was producing fine corn in this section.

Q. 109. I am talking about right around the smelter where it has not been fertilized, is it not a fact that soil will not produce anything?

A. I have seen some old grass coming, naturally, something didn't kill it and other things would naturally come too.

Q. 110. Well, if grass is growing it don't kill everything?

A. That is sage grass, it don't amount to anything.

Q. 111. It is a vegetable life of the poorest sort?

A. Yes sir.

Q. 112. Take the forests in Fannin County, is it not a fact those fumes affect a very little the undergrowth or underbrush, but when-

ever it does affect anything it is the larger trees, the trees having larger foliage?

A. That might be so in the Southern part of the County, up around the north part I think not, it affects everything.

Q. 113. Tell me one place where it has affected the underbrush?

A. Around Pierceville and Medola.

Q. 114. When did you notice that?

A. Last Friday and Saturday.

Q. 115. How many acres of underbrush where you noticed the underbrush was affected?

A. Hundreds of acres.

Q. 116. Did you get out and travel around and go around on hundreds of acres to see it?

A. I walked through hundreds of acres.

Q. 117. You went in an automobile.

A. I got out.

Q. 118. How far did you get from the road?

A. Probably one hundred yards, you could go one hundred yards and walk through a hundred acres.

Q. 119. But you didn't do that?

A. Yes sir.

Q. 120. You mean that the smoke showed damage on all that underbrush, undergrowth?

A. Yes sir.

Q. 121. Over all of it?

A. Yes sir.

Q. 122. Are you not going mighty strong?

A. No sir.

397 Q. 123. You noticed everything as you passed along, the briers, and the underbrush of all varieties?

A. That is what I was there for.

Q. 124. And you saw that over whole fields of it?

A. I didn't say that.

Q. 125. It affected all forms of vegetation?

A. I didn't say that.

Q. 126. What did you say then?

A. I say it was all affected. I didn't say every leaf.

Q. 127. Some had every bush affected?

A. No, but some part of every bush, the whole thing in general was affected.

Q. 128. The whole thing in general was affected?

A. Yes sir.

Q. 129. Please describe what you mean by that, the whole thing in general, but every kind of brush wasn't.

A. No thrifty bushes.

Q. 130. Not a thrifty bush in that section?

A. I don't think in two miles coming along there, along that road, facong the smelters, I don't think there was a bush in the whole place that was thrifty.

Q. 131. Not a one?

A. I don't think so.

Q. 132. Not a thrifty field of grass?
A. I don't believe there is any grass there, I didn't see any.
Q. 133. Not a thrifty corn stalk?
A. I didn't say that, there is some good corn there.
Q. 134. Not a thrifty bean?
A. Yes sir, I guess there is some good beans there.
Q. 135. Beans are more susceptible to the smoke than brush?
A. They claim that.
Q. 136. If the beans were thrifty, what was the matter with the underbrush, how can you explain that?
A. For the same reason that you explain thrifty gardens right close to the stack, they fertilize them well.
Q. 137. I believe you claim there are not thrifty gardens around there?
A. I didn't see any gardens.
Q. 138. That is there is nothing absolutely thrifty in the whole section?
A. I didn't say that.
398 Q. 139. What is there thrifty in there?
A. Perhaps there are some gardens getting along fairly well, I said the exposures facing the smelters were all damaged.
Q. 140. Every bit of it?
A. Yes sir.
Q. 141. What about the peach orchards there in and near Isabella, were they affected too?
A. I saw one peach orchard there that—it looked to be seven or eight years old, wasn't bearing.
Q. 142. Anything the matter with the foliage?
A. No, I don't think so.
Q. 143. Where did you see that peach orchard?
A. I couldn't describe its exact location, it is not facing toward the two stacks.
Q. 144. So it is there is not a thrifty bush or anything whatever in that whole section, according to you?
A. I didn't see but one peach orchard, I said that it didn't have the appearance of being damaged. Everything has been damaged to a certain extent.
Q. 145. You didn't see that corn field across the river within a mile of the Tennessee Copper Company's plant?
A. I saw several corn fields.
Q. 146. You didn't see Mr. Gillens pea crop down along the road between here and Copperhill, did you?
A. I don't guess I did.
Q. 147. You didn't see a thrifty crop on all your travels?
A. I am not testifying as to crops, I didn't examine any.
Q. 148. Why, didn't you state you looked at those crops?
A. I suppose I looked at the crops, I was just examining the timber, I was not supposed to examine crops.
Q. 149. The fact is, you were under the guidance of Mr. Vestal?
A. No sir.
Q. 150. He was along?

A. On the second day.
Q. 151. You were not looking for anything to see except smoke injury?
A. Looking for smoke injury—yes sir.
Q. 152. You were looking for injury?
A. Yes sir.
Q. 153. You were not looking to see anything except smoke injury?
A. We wanted to find out if anything was injuring the forests.
Q. 154. You had your whole eye strain and attention
399 solely upon injury, not looking for things that were not injured, is that a fact?
A. Mostly, yes sir.

Redirect examination.

By Counsel for Plaintiff:

Q. 1. State whether or not you went to find out conditions in the forests?
A. Went there to find out conditions and if there were any smoke injuries in the forests of North Georgia.
Q. 2. To see if there was any smoke injury?
A. Yes sir.
Q. 3. Now, I will ask you to state whether or not you saw any brush or undergrowth that appeared to have come out this year?
A. No, I couldn't say that I saw any that appeared to have come out in two years.
Q. 4. Now, about the Intrement Borer, do you use that in your service with the United States Government, in any kind of service?
A. Yes sir, it is used.
Q. 5. For what purpose?
A. We mostly use it in our service to determine the age of the smaller trees.
Q. 6. When you want to determine the growth of a tree, natural growth, state whether or not you take a section of the tree? Sections such as that?
A. Yes sir, in our investigations we always take cross sections.

The next witness, Will S. Shippen, having first been duly sworn, testified as follows:

Direct examination.

By Counsel for Plaintiff:

Q. 1. How old are you?
A. Forty eight years old.
Q. 2. Where do you live?
A. Ellijay, Gilmer County, Georgia.
Q. 3. How long have you lived there?
A. Lived there for eighteen years.
Q. 4. What is your business?

A. Lumber and timber.

400 Q. 5. How long have you been in that business?

A. I have been in that business for twenty-seven years. And my father before me was a lumberman, and he lived to be eighty seven years old, and he was a man of broad experience and handled a great deal of lumber, and I had his experience and teaching to start me out.

Q. 6. Did you ever engage in the lumber business outside of Georgia?

A. Yes sir, I cut four hundred million feet in Forest County, Pennsylvania, and had mills in Kentucky—Do you want my experience in the forests?

Q. 7. No, just speaking the milling business then, state what experience you have had through the forests of this country, the United States and Canada?

A. Well, I have made numerous trips examining the forests in Pennsylvania, on the Pacific Coast, say from Washington down to California, I have been in nearly all those states there. I have been in the inland empire of Idaho, and I have been in the forests of California, and have been in the forests of Mexico and Canada. I have been through Maine and spent two months last summer looking over two hundred thousand acres of spruce and hardwood in Maine, and have been over various areas in the United States and some in Mexico.

Q. 8. State whether or not you have bought land extensively in North Georgia, and timber rights?

A. Yes sir, bought quite a little, something over one hundred eight thousand acres, and fourteen thousand additional about one hundred twenty two thousand acres. I have looked over and examined a great deal more that I didn't purchase.

Q. 9. How much land do you now have in North Georgia?

A. Shippen Brothers Lumber Company owns one hundred eight or one hundred ten thousand acres, I am the President.

Q. 10. Is that company incorporated under the laws of Georgia?

A. Yes sir.

Q. 11. Who owns the stock?

A. Various stockholders throughout the north and south, and I also am interested and own a half interest in some twelve

401 or fifteen thousand acres additional, outside of the Shippen Brothers Lumber Company, in this same territory.

Q. 12. Is that timber land?

A. All timber land, bought for that purpose.

Q. 13. Are you acquainted with the methods of lumbering and milling and as to the cutting of forests?

A. Yes sir, I think I am thoroughly acquainted with the methods of lumbering and getting out logs and turning them into manufactured lumber, and then milling up all the manufactured lumber, in all these various stages from the stump to the consumer, in the northwest and south, and in the cypress swamps and yellow pine forests. And in the hardwood forests of the Central States and the white pine forests in the East and Pennsylvania.

Q. 14. Have you supervised in a personal way, or have you general supervision of the work in your forests on your own property here?

A. Yes sir, I have laid out the work and have general supervision of the whole thing.

Q. 15. What methods have you used in cutting your timber as to the preservation of the forests?

A. Well, when we were lumbering in Forest County, Pennsylvania, we had a growth of timber there that was practically all one age, and if you go into the forests there and cut down a tree you will find that it is practically the same age as its neighbor. They were not all the same size, but near the same age. Well, after you cut that timber off, if you wanted to reproduce, you would have to plant the whole thing, you could not use selective cutting there. After we finished that timber there, we begun to look the whole country over to find a location where we could use selective cutting and in that way perpetuate our supply of timber, so we would never exhaust our cutting, and we searched the whole Appalachian, down into the Blue Ridge Mountains and located here, because we thought conditions here were more ideal for that particular purpose. The reason of that was that all these forests here, that in the
402 forests here we have all stages of growth from the little acorn to the old matured tree three or four hundred years old. Here we can go into the forests and cut out the timber that is ripe and remove the timber that nature has planted two hundred years ago. Those conditions are different from the conifer forests in Pennsylvania, because there to start a forest you would have to plant the seed and wait three hundred years for a crop. Down here, nature has done that for maybe two or three hundred years ago, and for that reason our holdings in this territory gives us ideal conditions for this business.

Q. 16. Have you used selective cutting?

A. Where we have cut our own timber we cut only mature and thoroughly ripe trees and leave the smaller trees on the land, and when you cut out the older trees it removes the shade and the younger trees grow more rapidly and produce another crop of timber. So, we can harvest a timber — on our land the same as a farmer harvests a crop of corn on his land.

Q. 17. You say you came here eighteen years ago?

A. Moved here eighteen years ago, we looked over this property nineteen or twenty years ago.

Q. 18. What was the condition of the forests eighteen years ago?

A. The conditions were healthy. The trees showed a regular growth and the forests had an energetic, vigorous look about them.

Q. 19. Did that condition influence you in coming to this country?

A. Assuredly. We examined into the rainfall here, we examined the soil, and conditions for our business, for timber growing were good, since we have the heaviest rainfall of any section in the United States except a small area on the Pacific Coast. Rainfall is very necessary for the growth of timber. We have

a good soil which is another condition for the growing of timber. We have the richest flora of any section in the United States. We have the white pine which they have in the far north, and we also have the southern hardwood. Those conditions are brought about by the elevations here. Our timber grows anywhere from thirteen hundred feet — forty five or forty four hundred feet
403 elevation, and the elevation gives us a climatic condition that allows a white pine and hemlock to thrive here.

Q. 20. From your experience in the forests business, and lumber business, state your opinion of this section of the country as a forest growing section?

A. Well, I have found here as much as an inch and a half annual growth in poplar, an inch and a quarter on white pine and three quarters of an inch on oak. Those are phenominal growths and I don't think they have been equaled anywhere in this country. Of course, that is not a regular growth, those are something extraordinary. The regular growth would possibly be half of that with the moisture and soil and long growing seasons and sunlight in a favored tree.

Q. 21. Then what is your opinion as to the entire section, as a forest growing section?

A. It is the best I have known anywhere, I never have seen any such growth anywhere as here.

Q. 22. What are the conditions in the forests at the present time as compared to eighteen or nineteen years ago?

A. It is very much changed, the timber don't have that healthy look. If you start at the furnaces at Ducktown, you can take a zone there, practically everything is denuded, you can go a little further out and you will find timber showing the effects of these fumes. You go a little further and you will find the timber not so much affected. Still further you will find the leaves browned, and further out you will find only certain species that was affected by the fumes, and when you get beyond that you will find only an occasional tree, and when you get back thirty or forty miles, you often find only one or two species on the hillsides where the smoke gets to it. As you travel toward the mines conditions get worse and as you go away they get better. The forests are unhealthy and — sickly condition. If you cut into the tree you will find the growth has been decreased, and if interfere- with the growth of a tree the tree will die.

Q. 23. Have you been familiar with the history of this country since the Ducktown Copper Company and the Tennessee Copper Company began operations?

404 A. Well, I couldn't say that.

Q. 24. Well, for the past eight or ten years?

A. Yes sir, I have been thoroughly familiar with it eight or ten years. I think when I came here one of those companies were working there, using roast heaps, but that couldn't affect the forests in our territory.

Q. 25. How far is your land from the plants of the companies?

A. Some of our lands border on the Tennessee line and some are

thirty five miles from the Tennessee line, I would say they extend from right at the furnaces almost to thirty five miles away.

Q. 26. Have you been up to the plants of the two companies?

A. I have, repeatedly.

Q. 27. Have you examined the plants and gone through them?

A. I could hardly say I have been through all of the Tennessee Copper Company's plant, I don't know that I have been through it all, I have been through a large portion of the smelters, and have been about there where they mined the ore. At the Ducktown Sulphur Copper & Iron Company's plant, I have been at their plant, but was never sinside, further than to travel around on the outside and see from that point.

Q. 28. Are you familiar with the odor of the smoke that comes from the stack?

A. I certainly am, I know it thoroughly, I have smelled it out in the timber and begun at the plant and all through the territory.

Q. 29. Have you made a study, and to what extent, if any, of sulphur dioxide fumes?

A. I have had quite a little experience with sulphur dioxide. The first experience I ever had was with the manufacture of ice in the City of Louisville, Kentucky. We used the Roual and Pictet process. We got along all right with that gas until there come a leak and that changed the gas. The fumes got out and destroyed vegetation around there, killed an old cat and nine kittens in the engine room and asphyxiated the engineer. When I was investigating this matter first as a member of the Georgia Commission, we first had this matter up, I insisted that as we had made sulphuric acid ac-
405 cidentally in Louisville, these copper companies could do it on purpose if they tried. It brought about these same conditions in Louisville where we made it and it put us out of business.

Q. 30. Have you made any investigation into or study of smoke on the forests, trees and vegetation?

A. Yes sir.

Q. 31. Have you seen the smoke from those plants in any section of Georgia here?

A. Well, I would like to state first that these furnaces,——

Q. 32. Just a minute, have you seen it or not in this section?

A. Yes, sir, repeatedly.

Q. 33. Have you ever been up on the mountains and looked toward the furnaces?

A. Yes sir.

Q. 34. Have you seen the stacks from the position you occupied?

A. Yes sir, close at hand and quite a distance off, I had field glasses.

Q. 35. Have you seen smoke coming from these stacks?

A. Yes sir, repeatedly, both of them.

Q. 36. The Ducktown Copper Company and the Tennessee Copper Company?

A. Yes sir.

Q. 37. Have you seen it blowing in a direction away from Georgia and toward Georgia?

A. I have seen — blowing every direction of the compass, you might say.

Q. 38. Now, if you will go on and start there at the plant, and trace the smoke right down in this section,——

A. I have seen it coming out of the stacks from the hills there, and have observed it coming up right at the plant and have observed it from the mountains close by, and from Frog Mountain, from quite a number of different mountains, from Bailey Mountain and from Flat Top and from Rocky Face, and from Bald Mountain, and from other points lying west of Blue Ridge here, and on this hill here where they have a tank half a mile from where we are sitting, I have walked that and it depends entirely on the currents of air as to which way the smoke would travel, and what becomes of it. If the air is still it goes up for quite a distance almost straight up in the air, and then it drifts off with the air currents whichever way the currents of air
406 are moving. The two plants, if the air is blowing rapidly, the smoke will finally come together. I have never seen it where you could follow it with the eye for several miles after it left the plants that it did not get together. It seems to have an affinity, and seeks the company of the other volume of fumes.

Q. 39. Do you know the specific gravity of sulphur dioxide?

A. It is 2.21 as compared with atmospheric air.

Q. 40. What effect would that have on the sulphur dioxide, would it make it rise or come down, describe that?

A. This sulphur dioxide coming out of the furnaces is very hot, copper melts at 2,200 degrees Fahrenheit.

Q. 41. Or Centigrade?

A. Fahrenheit. Now, this sulphur dioxide is expanded 1/270 of its diameter for each degree of heat applied. On leaving the furnace stack at 2,200 degrees it will be expanded as many times as 270 is contained in 2,200. That is about eight times its natural condition. If it has the same degree of heat all the way, and in that condition it goes out into the air like a balloon, and will go until it loses that heat. Whichever way the wind is blowing it carries that gas off with it. As soon as this gas is cooled it becomes heavier than the air and settles down toward the earth, because the gas is heavier.

Q. 42. Does it seem to seek*m* the lower places?

A. It seeks the lower places, falls toward the earth. From the high hills you can see the whole valley; you can see the fumes leaving the stack and going off. The best way to see the conditions in there if you want to get a good view would be to have a flying machine and be up in the air and trace it right from the stack.

Q. 43. Are you familiar with the topography of this country?

A. Yes sir.

Q. 44. Does or not the smoke from those plants seek the gaps and waterways?

A. It will follow, the air has currents just the same as the currents in the ocean, and seems to have certain defined routes or ways it travels. Which ever way the wind is blowing the smoke will
407 travel. Some sections seem to be more affected than others, because the air currents blow through certain valleys and along certain ways.

Q. 45. State Mr. Shippen the difference in the condition of the timber and plant life generally on the sides of the mountain and ridges facing away from the Ducktown Basin, and between those which face north, or toward the basin?

A. Ordinarily the best timber stands on the north face of the mountains, because at that point there is more moisture, and the fire goes through there less, does not burn up the leaves, and the leaves are nature's way of fertilizing the forests lands. If the leaves are left there to decay and rot on the ground it builds up that ground and the north sides being away from the sun have more moisture, and it is where you find very much the better soil, and the best timber. But now, in the country with us, where it is facing the north, the smoke comes there and does much more damage on the faces of the mountains and ridges. They are more exposed to the furnaces generally than the other side, but that is not always true.

Q. 46. Have you or not seen the smoke on the north sides of the mountains?

A. Yes sir, I have seen it there and have smelled it there.

Q. 47. At that time what would be the condition of the south sides?

A. They would be free from the smoke. The sun sometimes helps to dissipate those fumes, sometimes breaks them up, it will stay with us longer if it is a wet day than if the sun is shining bright.

Q. 48. Describe the effects of sulphur dioxide, of this smelter sulphur dioxide on plant life—on forest trees first?

A. It crisps up the leaves, gives them an appearance as if one had placed them near a hot stove, looks like the leaves had been held too close to a hot stove. Dr. Hedgecock had some exhibits here showing the conditions, and the appearance of forest leaves when affected by the fumes.

Q. 49. At what season are the leaves most susceptible to injury?

A. Of course, when they are young and tender it hurts worse than any other time, because at that time of the year the leaf is full of sap, and puts forth its tender shoots and the fumes do greater damage then than any other season, but the leaves show the worst damage in August and September of the whole season.

Q. 50. Is it a natural condition for the leaves to fall to the ground in June, July and August?

A. No sir, something very unnatural when those conditions prevail in these mountains.

Q. 51. State if you have examined the sections here that we have, have you examined the sections here for that condition?

A. I have not been in the territory that Dr. Hedgcock and Mr. Clarke testified about, but I have been in considerable territory south of here, and some east of here and they have the same conditions as they spoke of here.

Q. 52. The same?

A. Possibly not so much so.

Q. 53. That is further away?

A. Yes sir, but the trees were injured. I have seen it back on Amacola, if you have got a map here—I seen it here, smoke fumes away up here (Indicating) this past month.

Q. 54. What effect did it have on the forests?

A. Excuse me, hadn't I better get that Amacola in here.

(It is agreed that Amacola is about thirty miles from the furnaces.)

A. I was camping there last month and repeatedly smelled the smoke there and saw it in the landscape and all about us. I noticed the damage and noticed particularly there on the hickory timber that is seemed to be one of the first wood that is affected.

Q. 55. That is not in the zone of acute injury?

A. I would hardly say so, in a zone where it has been affecting certain species of timber. That zone was around Ellijay some six or seven or eight years ago, and south of Ellijay.

Q. 56. What effect on a forest does the injury or destruction of the leaves have?

A. It seriously interferes with the growth of the tree, that
409 of course, depends on the time that leaf was destroyed. Of course, if the leaf has performed its natural function and has been on the tree, say, for half of the season, the effect on the tree wouldn't be near so great as if it were killed when the leaf was first putting out, when it was just maturing or when it was doing its rapid growth. If it is killed later in the season it wouldn't hurt the tree near so much, because then it had already performed the work for which nature intended it.

Q. 57. If the tree has already begun to lose its leaves for the winter season, the damage wouldn't be so great?

A. It depends entirely on the time they are injured as to how much it will hurt the tree.

Q. 58. That is as to the future of the tree?

A. Yes sir.

Q. 59. What effect does injury to the leaves of trees have upon the forests generally?

A. Well, of course, if you take the injury on every tree,—I don't know that I understand,——

Q. 60. I mean as to the protection by shade of the other tees?

A. Trees naturally, I wouldn't think it would injure them, because trees want light.

Q. 61. But as to the protection of the tree from fumes which will come in?

A. Of course, when you remove any shade that exposing the tree remaining to more visitation and heavier visitation of the fumes. Like if you destroy the large timber first, then the fumes could get in and attack the smaller growth.

Q. 62. Then the more destruction of leaves, the more liable it makes the other trees to injury?

A. No question about that.

Q. 63. Mr. Shippen, how often have you noticed the smoke in this section of the country?

A. I have been out in Georgia in the woods quite a little of late, and from what I have seen around Ellijay, I have seen so many times,—I have seen the smoke present this year more than I have ever known it before, I never have seen the smoke with us as often. It commenced in the early spring and has kept up all this
410 summer. I have seen vegetation and seen beans and peas damaged and killed on my place there in a single night. I have smelled the fumes in there the night before and the next morning they would all be crisped up and ruined, as if frost had hit it and damaged it. I will not raise one third of a crop.

Q. 64. Can you or not mention any times when you have seen that smoke in there?

A. I didn't make any note of it, I saw it in there in June, the early part of June, I remember very well. I saw it there in May, and I have seen it there this month, I saw it there in July.

Q. 65. Are you familiar with the rules of the Board of Arbitrators, as to,——

A. The only way is what I have heard—and I have read their written rules.

Q. 66. Then do you know what the requirements of the Board are as to dates?

A. They require them to file their application for damage,——

By COUNSEL FOR DEFENDANT: I except to that as the rules themselves would be the best evidence,—I don't care, just go on.

Overruled. Appeal prayed and granted.

A. They require them to file their claim and swear to their claim within fifteen days from the time the injury occurred, and state the day on which the injury occurred.

Q. 67. Have you noticed or not the garden and truck patches and field crops?

A. I have, I noticed a rye field, belonging to Dr. E. W. Watkins, went into the rye field of Dr. Watkins that lies in the valley immediately in front of my home. I have also noticed rye that we planted in my chicken runs, on our place, where I kept the chickens there at home.

Q. 68. What are the effects of sulphur fumes on that?

A. I have noticed the large rye field right in front of my home. I live upon the mountain and this rye field is in the valley right in front of me. I saw the smoke settle in on that just about the time the rye was in bloom, I was sure then that the rye would be just about ruined. A short while ago, the rye,——

415 By COUNSEL FOR DEFENDANT: Just tell what you saw, not what you were sure was going to happen.

A. When cutting that rye I went there and examined it as they were putting it up. The heads were large but they were chaffy and didn't have three grains where there ought to have been twenty five or thirty. I don't believe the man got his seed back. I am sure that rye crop was cut off four-fifths from what it would be if the smoke had not got in on it. The same was true in my rye that matured in the chicken runs. The straw grew up almost to my

shoulders, stood away up, but it didn't have any rye to speak of at all. I particularly noticed the roasting ears at my place.

Q. 69. What was the condition of them?

A. I got after my boy, a colored boy, for pulling the corn before it was in roasting ears. I went out with him to show him how to do it, and I pulled off some corn some of the ears and I got worst samples than he did. When the silks on my corn are black, turning black, you know that the roasting ears are about ripe.

Q. 70. What effect does sulphur dioxide have on silks and tassels of corn?

A. It turns it black. I meant the silks on the roasting ears.

Q. 71. What effect does it have on that?

A. Turns it black prematurely. The silk naturally turns black when it has accomplished its work.

Q. 72. Do you know anything about the condition of farms around here this year?

A. I don't much about the condition, but I have heard a good deal of complaint.

Q. 73. Mr. Shippen what is the condition of the section of country immediately surrounding the plants of the Ducktown Sulphur Copper & Iron Company and the Tennessee Copper Company?

A. Well, there is a map there that was made when I was out making this investigation before.

Q. 74. Refer to that.

A. Here is a map of the territory that was made by the Department of Forestry, by Mr. Patterson, who was sent down here to make an investigation in behalf of the State of Georgia in this original case.

412

Q. 75. When was that?

A. I don't remember exactly the date, but I think it was in 1906.

Q 76. Was you with him?

A. Yes, sir, I went with him when he made this investigation, and in the territory there which is on the map, on which he shows the various zones injured at that time.

Q. 77. Are they shown on the map?

A. Yes, sir, there are three different zones he shows here.

Q. 78. Could you state approximately when the map was made?

A. It was made in 1906, if I remember correctly, somewhere near that date.

Q. 79. Now, in the section marked by close parallel lines, white parallel lines immediately around Isabella, and the point marked McCays, state what was the condition of the land and timber, etc., there?

A. Well, that condition was practically destitute of forest growth.

Q. 80. Have you seen that?

A. I have.

Q. 81. What is the appearance of that land?

A. Well, that section looks as barren as the Sahara Desert.

By Counsel for Defendant: Have you ever seen that?

A. I have seen pictures of it, by great artists.

Q. 82. In the part marked with more distinct parallel lines,—

A. Do you want me to testify as to present conditions?

Q. 83. Yes. Just commence and tell conditions at the present time.

A. In this next section?

Q. 84. Describe the conditions of to-day.

A. Both of them are as they were at that time,—both are a little worse, but the same conditions prevail.

Q. 85. Coming back to the first zone there, what is the color of that land there, is it a loam color or what?

A. It is more of a red color. The forest at one time must have had a fine top soil, but most of this has disappeared, has been
413 washed away and silt and rocks and gravel are left. It looks as if the whole thing is dead. The bacteria, land to produce must have bacteria in it, and it seems as if the bacteria is not in this land, and it will not produce plant life and vegetable life without bacteria.

Q. 86. Can a plant live without bacteria in the soil?

A. No, sir. That is the way our mountains are fertilized has more live bacteria than anything else.

Q. 87. To what extent has that land eroded?

A. It is washed in deep gulleys, all the ditches and streams are filling up, gut deep mud in them, it washes from the hill sides until it almost runs mud, runs red mud in that territory, washing away rapidly. Then the streams have filled up in lots of places with clay and mud.

Q. 88. Does that effect the flow of the water?

A. Yes, sir, it comes off of the hill like water off of a house, the vegetation all disappeared and it does not hold it back and let it penetrate the ground like it does in the forests, but runs off like a house roof.

Q. 89. Does that section which you have described extend over the Georgia line?

A. Yes, sir.

Q. 90. And into the State of Georgia?

A. Yes, sir. I have not examined that closely recently, I have not been through that territory as much as I was then, but two years ago I was up there and at that time it was about where it was, or maybe a little further into North Georgia.

Q. 91. The second zone there described, that is indicated by wide parallel lines?

A. The second zone is,——

Q. 92. What does that zone indicate?

A. The area of serious injury.

Q. 93. Is that described on the map?

A. Yes, sir, that has been correctly portrayed, and there in that district there is a great deal of timber that is killed, but you will find what we call in the woods staghead trees, trees that have been injured in the top and are trying to live. The life of the
414 trees have been badly hurt, and nature is trying to take care of it. If you cut off the moisture from the limbs above, the supply of moisture, in order to try to save the life of the limbs be-

low, there not being enough to supply the upper limbs, they will die. It is natural for a tree, like a human being, to try to protect itself.

Q. 94. That third zone there, describe conditions there?

A. The third zone extends, I should say that is leaf injury, that is the zone of least injury, and I have seen that extend eighteen miles beyond where it is located at that zone. It is in the Amacola territory where I saw this leaf injury, that is eighteen miles, at least.

Q. 95. You mean Amacola Mountain is beyond the limit shown on the map?

A. Yes, sir, eighteen miles from the zone shown here on this map. Now, at that time, I don't know that I altogether agree with this map at that time, because I found in certain trees here, I found heavy injury. Heavier injury than was shown among certain species outside of this zone of leaf injury. That was confined to the chestnut oak and hickory and some of the hemlock and some white pine, but now the leaf injury zone is extended in all directions.

Q. 96. How much hemlock is there in this country now?

A. In certain sections where it is protected by large mountains, like on Jack River, there are large forests of hemlock, but even there it is being browned by the fumes.

Q. 97. Is this country where hemlock would do well?

A. Yes, sir, there was lots of it at one time.

Q. 98. How much in this section?

A. It is practically all gone. As you pass along over the railroad between here and a point on the river down here, McFarland, along the line of railroad, I see that it is killed by smoke as I pass along.

Q. 99. Is the absence of hemlock due entirely to lumbering?

A. No, sir, hemlock has not been worth much in this section and because of that it has not been cut out so much, because the cost of cutting it and manufacturing it into lumber prevented lum-
415 bermen from handling much of it. I have here a sample or specimen of the destruction by fumes on the hemlock.

Q. 100. Will you file that map and make it Exhibit A to your deposition?

A. Yes, sir. Now this are- of leaf injury has extended very greatly in all directions as laid down on this map.

Q. 101. What is the conditions, speaking from your experience as a lumberman and timberman, and your experience in and through the forests, what is the condition of the forests in North Georgia, as compared with other forests of the United States?

A. Why, the nearer you get to the Ducktown Copper plant and that territory, the nearer those fumes you get, the forest- are sickly and unhealthy. The trees are inferior to what you see in other parts of the country, unless something unusual has hold of them. I have seen other forests suffering from certain troubles, but you could find out what it was. I have seen trees in Maine, and at Valley Forge, where they had blight, but they could cut down those trees and find out what caused it.

Q. 102. Has the Government bought tracts of land east and north of here?

A. Yes, sir, about thirty five thousand acres east of us, as I remember, eighteen or twenty miles from this point. They have bought some land over toward Blairsville some twenty six miles from here, and I think they have recommended for purchase, I don't know how many acres, but quite a large body of land, they have acquired from the Consauga Lumber Company and also land northwest from here, and also acquired the Prendergast lands in Polk County, north of here.

Q. 103. Mr. Shippen, are the forests in North Georgia in a healthy normal condition?

A. Decidedly they are not.

Q. 104. I will ask you to state whether or not there is any condition present in these forests to which their unhealthy state can be attributed except from the fumes of these plants?

A. None that I could ever be satisfied but that for the least ten years.

416 Q. 105. Have you gone into the forests and searched and hunted for something else?

A. I have repeatedly.

Q. 106. Have you sent out your foresters and woodmen in the forests for that purpose?

A. I have.

Q. 107. Have you devoted much of your time to the study of conditions?

A. Yes, sir, I have studied the question more or less. Been in my mind a great deal.

Q. 108. State whether or not you have examined trees and forests generally within a short time after you have seen the smoke in there?

A. Yes, sir, I have. I have seen the effects on the leaves Up on the mountain near my house, there was some white pines sixteen or eighteen inches in diameter. A tree there had been affected two times before and then put out again in the spring. I saw the smoke come in on that tree, it covered the whole country, and in a day or two after the leaves begun to turn brown at the points and in — week they were dropping off. The tree never did put out any more, it was killed by the fumes.

Cross-examination.

By Counsel for Defendants:

Q 1. You say you own one hundred and eight thousand acres of land in North Georgia?

A. The Shippen Brothers Lumber Company does.

Q. 2. That is a corporation?

A. Yes, sir.

Q 3. You are one of the stockholders?

A. Yes, sir.

Q. 4. You are the President?

A. Yes, sir.

Q. 5. You have active management of the company?

A. I have.

Q. 6. How much of that do *onw* the title in fee?

A. I couldn't tell you exactly, but something like fifty eight to sixty five thousand acres.

Q. 7. About sixty thousand acres?

A. Fifty eight to sixty five thousand.

Q. 8. And on the remainder you own just the timber interests.

A. Have timber deeds, they are on record.

417 Q. 9. That gives you the privilege of so many years to cut off the timber?

A. I don't think any years *or* stated, there is no specific time.

Q. 10. You purchased that within the last eighteen years?

A. Within the last nineteen years.

Q. 11. Up to what length of time have you been purchasing it?

A. Our last purchases occurred prior to ten years ago. We did purchase, maybe a little in the last ten years, practically none except where we were going to cut it. We have not purchased any for holdings, as soon as the smoke came in our territory or district, we stopped our purchases.

Q. 12. I believe you have been present all the time the testimony was being taken in this case?

A Most of the time.

Q. 13. You have looked up the witnesses in the case?

A. Why, I suppose I have, I am vitally interested in the case, yes sir, I have.

Q. 14. You have been in conference with the attorneys for the State of Georgia all the time?

A. I have been advising them to the best of my ability.

Q. 15. Sitting by them and prompting them continuously?

A. Yes, sir.

Q. 16. Of course, you paid your own expenses during all these times of taking testimony?

A I think every one else has.

Q. 17. I asked you if you were paying your own expenses?

A. I am.

Q. 18. You were present at Chattanooga?

A. I was.

Q. 19. And at Knoxville?

A. Yes, sir.

Q. 20. You have been in Blue Ridge during the entire time?

A. Yes, sir.

Q. 21. As a matter of fact you have consulted with the attorney general for Georgia before thw action was ever brought didn't you?

A. I don't recall as to that—do you mean the original action?

Q. 22. Of course, there has not been but one action by the State of Georgia, the one heard in 1906?

A. You mean Mr. Hart?

Q. 23. Yes, sir.

A. Yes, sir.

Q. 24. As a matter of fact you instituted the case, didn't you?

A. I don't know that I would say that.

418 Q. 25. You aided in it?

A. I think quite a bunch of us, I don't think I was the only one.

Q. 26. As a matter of fact, you were the moving spirit that has this suit brought against this company?

A. I know I had considerable to do with it.

Q. 27. You have been at it continuously from that day to this?

A. I have been trying to get these fumes stopped to save this country.

Q. 28. In fact your corporation has filed a bill against the Ducktown Copper Company in the United States Court for the Southern Division of the Eastern District of Tennessee?

A. Yes, sir, we filed a bill of injunction asking for relief after we had waited for five or six years for you people to relieve the situation by making sulphuric acid plants, which they were supposed to put in to take out the acid. I have always believed from the start,——

Q. 29. I am not asking for your beliefs, answer my questions and we will get along?

A. I would like to explain my position. You are trying to show up one position and I want to show you the other. I want to show you the things that appear that put me in the position to take the interest in the matter I am now taking.

Q. 30. You have stated the conditions existing in North Georgia with reference to timber?

A. You go on about a suit. I want to say I have never had any desire, never wanted to put them out of business, all I want is for them to take care of their fumes and keep them away from us. I don't want damage. I want the fumes stopped, I want our timber kept from being hurt.

Q. 31. You filed a bill in the Federal Court?

A. We have.

Q. 32. When?

A. The records will show.

Q. 33. About when?

A. I don't know, the records will show.

Q. 34. Four years ago?

A. If I remember correctly it was five or six years ago. We have up the suit in hopes that you people would relieve the situation.

419 Q. 35. The evidence has been taken in that case?

A. It has. It has been submitted to Judge Sanford. He told us that he would not pass on the case until the Supreme Court had passed on the Georgia case.

Q. 36. So that case has been heard before Judge Sanford?

A. Yes sir.

Q. 37. You gave your testimony in that case?

A. I did.

Q. 38. Now, Mr. Shippen, I believe you compromised the matter

against the Tennessee Copper Company did you not? Your company?

A. I think my corporation compromised or gave an easement over my protest.

Q. 39. I say your corporation compromised its claim against the Tennessee Copper Company?

A. I think they did.

By COUNSEL FOR PLAINTIFF: We except to the question as being entirely irrelevant and incompetent.

Overruled.

Appeal prayed and granted.

Q. 40. When was that done?

A. I don't remember, it was after the State of Georgia suit was decided, after the injunction was granted.

Q. 41. Four years ago?

A. I think a greater time than that.

Q. 42. Five or six years ago?

A. I don't remember.

Q. 43. How much did they pay your company?

A. I don't know as that——

Q. 44. I have asked for it.

A. Do I have to answer that question?

By COUNSEL FOR PLAINTIFF: Yes sir.

A. They paid us fifty thousand dollars.

By COUNSEL FOR PLAINTIFF: We except to the question and answer covering any settlement or litigation with or against the Tennessee Copper Company as incompetent and irrelevant and immaterial.

Overruled.

Appeal prayed and granted.

Q. 45. Was the settlement in writing?

A. I suppose it was.

Q. 46. Have you a copy of that writing?

A. I have not.

Q. 47. What was the nature of that settlement?

A. I couldn't tell you that.

Q. 48. Did you release them from all liability?

A. I couldn't tell you that.

420 Q. 49. Did your company agree that you would not prosecute any injunction suit against them for emitting smoke and killing timber on your lands?

A. I don't know that we did. I couldn't tell you that.

Q. 50. You were the President of the company?

A. I am.

Q. 51. You were president at that time?

A. I was.

Q. 52. You say that you personally did not agree to the compromise?

A. I stated my position before our directors and stockholders and was not present when it was done. They seemed to have different views from those I had. I left the meeting and let them go on with the matter, and I understand they accepted the proposition.

Q. 53. You know it was accepted?

A. It was.

Q. 54. You know that your company got fifty thousand dollars?

A. They did.

Q. 55. You were then President of the company, were you not?

A. Yes sir.

Q. 56. You were in active management of the company?

A. Yes sir.

Q. 57. Still you don't know what was the content of the settlement or compromise that was made?

A. I don't know that I do, that has been possible seven or eight years ago, I don't remember.

Q. 58. You know whether or not your company released the Tennessee Copper Company from all liability for damages prior to that time?

A. I stated so, you don't think they would pay us fifty thousand dollars for nothing.

Q. 59. You know whether or not your company released them from subsequent lability?

A. I don't know.

Q. 60. You don't know whether your company has a right to file a bill against them?

A. I do not.

Q. 61. Any way, your company has never filed a bill of injunction against them?

A. No. If our company had to proceed against the Tennessee Copper Company, I think we would receipt our bill and hand it to them. I think they are immune against the Federal Court, and I don't think we could do anything where all the people are on their side.

421 By COUNSEL FOR PLAINTIFF: We except to all the questions and answers in regard to any alleged settlement made by the Tennessee Copper Company for the reason it is immaterial and irrelevant to the issues in this case, and second because it has been testified that the settlement was in writing, and that is the best evidence.

Overruled.

Appeal prayed and granted.

Q. 62. The Tennessee furnaces are very much larger furnaces *are very much larger furnaces* than the Ducktown Company's furnaces, are they not?

A. I don't know that, I never was in the other plant. I never have examined the two plants with that in view. I never have been in both plants.

Q. 63. But you know it is the larger plant, don't you?

A. It has got the largest stack.

Q. 64. You know they operate the larger mines and the mines have the greater capacity?

A. I don't know about that.

Q. 65. You know it has more furnaces?

A. I have never investigated anything at both of the plants, I can't see much difference in volume of smoke.

Q. 66. Do you mean to swear you do not know that the Tennessee Copper Company's plant has a greater capacity than the Ducktown Copper Company's plant?

A. I am swearing from only what I saw.

Q. 67. But do you say that you do not know that the Tennessee Copper Company has not a larger capacity then the other?

A. I don't know anything about the capacity of either of the plants, I don't know what is the capacity.

Q. 68. You have been through them?

A. I have been through the Tennessee Copper Company's plant partly, but what could a man tell as to the amount of stuff being smelted in one plant or the other?

Q. 69. You are not a botanist?

A. No sir.

Q. 70. You are a layman so far as that is concerned?

A. Most assuredly.

Q. 71. You are swearing about the fumes injuring the forests?

422 A. Yes sir, I know they do injure the forests.

Q. 72. So there are some things a layman can swear to and others he cannot?

A. If I knew about those things, I could tell you.

Q. 73. Anyway, the Tennessee Copper Company is much nearer the Georgia line, you know that?

A. At some points it is.

Q. 74. I am talking about the Tennessee Copper Company's plants?

A. I am too.

Q. 75. Do you mean that the Ducktown Copper Company's plant, any part of it is as near as any part of the Tennessee plant?

A. If you are talking only about the Georgia line, you are right, but I can show you in Georgia where the Ducktown Company is as near to it, if we were up there.

Q. 76. I will not take the time to go over that matter with you?

A. There is Georgia territory which the Ducktown Copper Company's plant is nearer to than the Tennessee Copper Company.

Q. 77. Then your testimony is to the effect that the Ducktown Copper Company is as near to all the lands lying in Fannin County, as the Tennessee Copper Company's plant?

A. Some of the land in Fannin County, the Ducktown plant is nearer to than the Tennessee Copper Company.

Q. 78. But take the major part, the large body of Fannin County?

A. I think the Tennessee Copper Company is two miles nearer the larger body.

Q. 79. And it has the high stack.
A. It has.
Q. 80. And yet you are not prosecuting any suit against them, but you have one against the Ducktown Copper Company?
A. You cannot get jurisdiction on the Tennessee Copper Company in the United States.
Q. 81. Is that the reason you have not filed a bill against them?
A. That is one reason. There is no use to sue them in the Courts of Tennessee under any consideration.
Q. 82. That is because you say the Courts in Tennessee will not give anybody justice?
A. Taking the past history, that is one reason that operated in making a deal with the Tennessee Copper Company that was made. Your company can be sued in the Federal Court and we felt
423 we could get justice.

By Counsel for Plaintiff: We except to all the questions and answers relating to any settlement for the reason it is not relevant to any issues in this case.
Overruled. Appeal prayed and granted.

Q. 83. In addition to that you tried to compromise with the Ducktown Copper Company, didn't you?
A. I think some negotiations were made along that line with Judge Parks and Mr. Freeland?
Q. 84. Don't you know there was?
A. Yes sir, I know it.

By Counsel for Plaintiff: We except to that for the same reason as above.
Overruled. Appeal prayed and granted.

Q. 85. You tried to get twenty five thousand dollars?
A. No sir.

By Counsel for Plaintiff: We except for the same reason as above.
Overruled. Appeal prayed and granted.

Q. 86. As a matter of fact didn't you offer to take eight thousand dollars?
A. No sir.
Q. 87. They refused to give you anything?
A. Never, on your life.
Q. 88. Now, Mr. Shippen, you have been here eighteen years?
A. I came down here pretty nearly twenty years ago.
Q. 89. You bought those lands eighteen and nineteen years ago?
A. About nineteen years ago, I moved here about eighteen years ago.
Q. 90. You remember when that high stack went up in 1906?
A. I remember about that time.
Q. 91. About the time the case was heard in the Supreme Court?
A. Yes sir, I think the same year.
Q. 92. That didn't increase the bad effects of these fumes, did it?

424 A. I think it did. As I remember the effects were greater everywhere. I think it increased, but I think the increased smelting in the basin was responsible for it. I wouldn't all together attribute it to the Tennessee Copper Company, attribute it to what you people were doing by putting out an increased amount of fumes and poising the air, which made the gases that much more deadlier.

Q. 93. You are a layman?

A. Yes sir.

Q. 94. If you are a layman, why are you trying to swear what was the cause of the increase of those fumes?

A. The increase I know, absolutely what caused it. If you smelt copper you cannot incinderate copper without liberating those fumes.

Q. 95. If you are a layman why are you swearing positively it was the Ducktown Company that this increased damage was attributable to?

A. I didn't swear that positively,—These people were building additional furnaces to put the ore in.

Q. 96. You know now that the Ducktown Company increased its output about that time?

A. No, I am not talking about the Ducktown Company, I am talking about the Tennessee Copper Company.

Q. 97. You were swearing about the Ducktown Copper Company?

A. No.

Q. 98. Well, the- did or did not the Ducktown Company increase its capacity about 1906?

A. I couldn't tell you as to that.

Q. 99. You know the Tennessee Company did?

A. I know they did, built additional furnaces and built a big stack.

Q. 100. You know immediately after that conditions became worse?

A. From that time conditions have been worse, yes sir.

Q. 101. Then it must have been the Tennessee Copper Company that caused those bad conditions, wasn't it?

A. The Tennessee Company and possibly the other company, I don't know what they did.

Q. 102. The Tennessee Company increased its capacity and built its high stack about that time, and you don't know that the Ducktown Company did increase its capacity, then you would naturally conclude it was the Tennessee Company that did the damage?

A. It helped and contributed to the cause.

425 Q. 103. If the other people did not increase their capacity or high stack, how did they contribute to it?

A. They were doing damage all along, when they put their ores,—they were the first ones to begin roasting the ore green. They were doing damage in our territory before the Tennessee Copper Company.

Q. 104. When was that?

A. Prior to the time of the building of the high stack.

Q. 105. I am talking about when the high stack was built and they increased their capacity. If the Ducktown Company didn't increase its capacity, and didn't increase the height of their stack, how could they have contributed to the increase in damage?

A. Because the fumes from both furnaces united in whatever territory the winds take them.

Q. 106. Don't you know the damage couldn't possible be as bad as it was after,——

A. I don't know about that, they have been doing damage all right. Both doing it according to the amount of stuff they are smelting.

Q. 107. Now, Mr. Shippen, the damage increased in 1906, 1907 and 1908, and was pretty bad all through this North Georgia section?

A. Yes sir, it was.

Q. 108. But it has never been,—Has it never been any better since that time?

A. Why, in some sections of the country it has been better and in some sections it has been worse. If you could follow those fumes during the entire time you could see how that was. It does not damage Blue Ridge one year and the next year maybe it will, you don't know where it is going, and for that reason you cannot absolutely state just the conditions with respect to what it is to-day and what it was last year or the year before.

Q. 109. You have been at Copperhill and Isabella?

A. Yes sir, repeatedly.

Q. 110. You have been there and seen them construct those acid plants?

A. Yes sir.

Q. 111. You know they are extracting a large amount of
426 acid from those fumes?

A. I presume so. The acid plants of the Tennessee Company has the appearance of being much larger than the Ducktown Company, has a great many more chambers, and larger plant.

Q. 112. You know they extract more acid than the Ducktown Company?

A. I have seen the reports of the railroad,——

Q. 113. I am not asking you about any reports from the railroad, now, I say,——

A. I have seen ten or twelve or fourteen cars go out from the Tennessee plant.

Q. 114. So it is you know they had an acid plant of greater capacity than the Ducktown Company?

A. I really,—As a matter of fact I don't know whether they both use the same process.

Q. 115. But you know the Tennessee Company has a plant of greater capacity?

A. Yes sir. I guess they both use the chamber process. One of the first plants your company, made an experimental plant, run along for a long time without making any acid at all. You asked me about the acid plants, that plant of yours was a failure, that

process was a failure and you took it out. The Tennessee Company built a chamber process plant and was successful, but your plant is not anything like as large as the Tennessee plant.

Q. 116. If you can swear so positively that the Tennessee Company has not an acid plant that has a greater capacity than the acid plant of the Ducktown Company, why was it you couldn't swear that the Tennessee Company had a larger plant, larger smelting capacity that then Ducktown Company?

A. Are you speaking of the furnaces?

Q. 117. Yes sir.

A. Well, because I don't know much about your furnaces, or the capacity of them. I never have been at the Ducktown Company's plant, but I have seen the fumes escaping from there. I don't know whether that is on account of the Tennessee Copper Company's acid plant or whether it is on account of your people smelting more ore.

Q. 118. Did I ask you about that?

A. I suppose that would be the answer to your question, you asked me about the size of the plants, and you asked me why it was
427 that I could tell you one thing one time and not something else at another, and I am telling you why. They are smelting more ore at your plant, or wasting more gas at your plant.

Q. 119. Still you are going to stick to it, that you don't know whether the Tennessee Copper Company has a greater ore smelting capacity than the Ducktown Company or not?

A. I am going to stick to it that I don't know whether they smelt more ore or not.

Q. 120. You have been through the furnaces and have looked at both of them?

A. No sir, I have never been in your furnaces.

Q. 121. Didn't you ever look through either one of them?

A. Of the Ducktown Company?

Q. 122. Yes sir.

A. No sir.

Q. 123. If you went around there you could see them?

A. I was along the road by your plant.

Q. 124. Wasn't you about the furnaces?

A. I was within one hundred yards of your furnaces.

Q. 125. And when you got within one hundred yards of there you begun to strangle?

A. We went through that blue stuff there.

Q. 126. Will you tell me when it was and how it was that it strangled you?

A. It affected my throat badly.

Q. 127. But the fumes from the other plant never did affect your throat?

A. Not as strong as at Ducktown.

Q. 128. So it is that the Tennessee plant is wholly innoxious?

A. They may have better equipment at the plant.

Q. 129. They paid you fifty thousand dollars for nothing?

A. No sir, for damages they had done.

By COUNSEL FOR PLAINTIFF: We except to that as immaterial and irrelevant.

Overruled. Appeal prayed and granted.

Q. 130. Going back to where we started, you know those
428 two concerns do extract a great amount of acid from those fumes?

A. I know I have seen acid coming from there.

Q. 131. You swore a while ago you saw how many carloads?

A. I have seen tank cars coming from there loaded with acid.

Q. 132. What quantity of tank cars leave there?

A. As much as ten or fifteen carloads, almost train loads.

Q. 133. Formerly that was all going out and being diffused in the atmosphere, wasn't it?

A. If they are smelting the same amount of stuff it was.

Q. 134. And hence is it not, of necessity, the acid plants take out that much poison, or in other words, the atmosphere was just that much more poisonous?

A. Most assuredly, if conditions were just the same. If they are smelting just the same they did then.

Q. 135. Are you going to swear that taken as a whole the conditions in North Georgia are just as bad since that acid is being extracted as before?

A. Well, I have always sworn, I have sworn, that conditions at Ellijay, in Gilmer County, Georgia, where I now live, for smoke, has been with us more, oftener, and in great quantities this year than ever before in my life.

Q. 136. Then you swear that taking the acid out of that smoke, and away from the atmosphere, is making conditions worse?

A. No, sir, I am not. I do not know as to what those people are smelting up there, we have not been able to get it, as to what they are smelting. We don't know what they are doing, all I know is what is being done down here.

Q. 137. What people are you talking about?

A. Your people, the Ducktown Copper Company.

Q. 138. Don't you know there has been filed in this case a record of everything that is being done by the Ducktown Copper Company?

A. I never heard of it.

Q. 139. Do you think you know everything that has been done in this case?

429 A. No sir, you summoned witnesses from your own plant when I was not present, you examined two witnesses.

Q. 140. Anyway, you testify that conditions are getting worse?

A. I don't know that they are getting any worse, but conditions are worse with us now than ever before so far as smoke is concerned.

Q. 141. You mean to testify that conditions are worse now than when the acid plants were put up?

A. In certain sections, yes sir, at Ellijay there is more smoke than ever before.

Q. 142. Mr. Shippen, I am talking North Georgia as a whole, are

the average conditions there in Fannin and Gilmer Counties worse now than they were before the acid plants went in?

A. As explained to you a moment ago, it is hard to get anything definite or give a definite answer, because of the difficulty of getting definite information. In some places it injures worse one year and then in other places it worse another year. In certain parts of our County, but have seen it this year, certain parts affected a year or two ago are not affected so badly now. I have seen timber in Blue Ridge browned, but I don't see it now. I see little effects of it now as compared with what I have seen it here.

Q. 143. Give us your judgment as to it affecting sections, taking it generally, on an average, is it worse now than before the acid plants went in?

A. I don't see much difference. I don't see so very much difference in the situation, if anything I think it is worse, because the injury has been applied longer, and I believe the longer the conditions prevail the worse we will see this country affected, because if you injure a tree it don't show up right that moment, some times it will take several months to show up.

Q. 144. Did you ever study the diseases of trees?

A. Only nominally, I am not an expert along that line.

Q. 145. There are diseases in trees?

A. Yes sir, a number of them.

Q. 146. Trees will die regardless of smoke in the forests?

A. Yes sir.

430 Q. 147. Are there any diseased trees in North Georgia?

A. Yes sir.

Q. 148. Do they die any way, from other causes than smoke?

A. Yes sir, they die from lightning, fire, from fungi and insects.

Q. 149. What kind of trees are especially subject to disease, and fungi.

A. The white pine and chestnut. I think the chestnut has more *any* enemies than almost any of the forest trees. Whole forests have been striped out by disease in the trees. I went to Valley Forge where the chestnut forests had the blight disease, that whole forest was diseased. The Government has been fighting the disease to stop it, but we have not got that disease here.

Q. 150. Is not the hickory also subject to diseases?

A. Not so much as the white pine. The disease in hickory is mostly from beetles and insects.

Q. 151. Of course, you have gone over the records in all these cases?

A. Gone over the records?

Q. 152. You have gone through the records in your own case, and know everything that has been testified in that case?

A. I don't know everything, I am more or less familiar with it.

Q. 153. You have had access to the records in the various smoke suits?

A. Yes, sir, part of them.

Q. 154. Hemlock is especially subject to certain diseases?

A. Yes sir, mostly insects and beetles.

Q. 155. Even oaks you see them dead in all forests?
A. Yes sir, oaks have beetles and worms the same as chestnuts.
Q. 156. Have the lands in this North Georgia section increased in value during the last eighteen years?
A. Naturally they will in every section of the country. They have increased, of course, couldn't do otherwise.
Q. 157. How much did you pay for your land eighteen and nineteen years ago?
A. I don't remember what the purchase price was, we paid——
Q. 158. Fifty cents an acre?
A. We have paid as much as one thousand dollars for one
431 hundred and sixty acres, from that down to a dollar an acre.
Q. 159. And sometimes as low as fifty cents an acre?
A. No.
Q. 160. What are your lands worth now?
A. That is a pretty hard thing to tell.
Q. 161. About what?
A. I wouldn't know, it would be a matter of opinion, according to the land and where it was located. It would be worth considerably more now than then, some would be worth considerably more and some wouldn't be worth very much.
Q. 162. Have not land increased fifteen and twenty times in value since eighteen years ago?
A. They may have done that, I have not kept up with the land values.
Q. 163. Have they not done it?
A. I guess some lands have increased more than that.
Q. 164. In testifying in your case, state whether or not these questions were asked you and you answered them?
"Q. Have these lands or not increased in value since you bought them seventeen years ago?
"A. Certainly they have.
"Q. About what proportion?
"A. About seventeen years ago, in some places, land could be had for as low as a dollar an acre. They are worth fifteen or twenty times that much today."
Is that so or not?
A. Certain land, yes sir. Down in Alaculsa Valley that has been done, some parties bought land at a dollar an acre and borrowed fifteen dollars an acre from a trust company in Chicago, and is recorded in the courthouse.
Q. 165. On an average, in North Georgia, in Fannin County, in the smoke zone how much has it increased?
A. In the smoke zone it has gone down like forty, you can buy lands now less than you could a few years ago. These lands I am speaking of lay in the Conasauga Valley. You see little injury there.
Q. 166. Is Fannin County in the smoke zone?
A. Most assuredly, but this land is not in Fannin County,
432 it is about the Fannin County line, Fannin and Union County.

Q. 167. Is Gilmer County in the smoke zone?

A. Yes sir, part of it is.

Q. 168. How much has land increased in value within the last fifteen years?

A. You are asking me something it is absolutely impossible to answer. Certain lands, if you will give me any certain lands you want, I can give you an opinion on it. I am not going to take the whole universe, I cannot cover that.

Q. 169. I don't want you to take the whole universe, let's take your holdings of 108 thousand acres, how much have they increased in value within the last eighteen years?

A. About as I testified in that case, about fifteen or twenty times.

Q. 170. Well, have they done that?

A. Take them as a whole, I wouldn't be surprised if they had.

Q. 171. How many feet of lumber have you cut off of them?

A. We have not cut off those lands in question, have not cut ten per cent.

Q. 172. I am not asking that, but how many feet of lumber have you cut off of them during that time?

A. We cut,—off of that land?

Q. 173. Your lands, the lands you say have increased fifteen or twenty times.

A. The lands spoken of, wee have not cut off, those that have increased in value so much.

Q. 174. I am asking you about your one hundred and eight thousand acres of land, you say it has increased in value fifteen or twenty times?

A. Yes sir.

Q. 175. How much lumber have you cut from those lands?

A. Cut very little.

Q. 176. How many thousand feet?

A. I couldn't tell you that.

Q. 177. How many million feet?

A. We have operated our plant almost exclusively and entirely from timber which we purchased outside, trying to hold our own timber.

Q. 178. I am not objecting to your saying that? But how much did you cut from your own lands?

433 A. I guess we have cut five or six million feet. I don't know whether that is correct or not. We have cut very little timber. We have six hundred and fifty million feet of timber on our own lands.

Q. 179. So it is you have taken off five or six million feet and still the land has increased fifteen or twenty times?

A. Yes sir, where it is killed we cut it off, where it has fallen down and things like that.

Q. 180. The Government has condemned some of your lands?

A. It has.

Q. 181. I believe you testified in that case about the value?

A. Yes sir.

Q. 182. You testified in that case, didn't you, that it was worth thirty dollars per acre, with the birds singing in the trees?

A. I don't remember about that. I would like to see that if you have a copy of the record.

Q. 183. You did testify it was worth thirty dollars an acre?

A. I don't remember about that.

Q. 184. Don't you remember what you testified in that case about the value of those lands?

A. I do not.

Q. 185. When did you give your testimony in that case?

A. It has been several years ago, I don't remember just when.

Q. 186. It has been three years ago?

A. I don't remember that.

Q. 187. It has not been over that?

A. I hardly think so.

Q. 188. Really, don't you remember what value you put on those lands?

A. I don't. That land was almost out of the smoke zone, and no timber had been cut off of it, never a stick had been cut.

Q. 189. Now you testified about some rye that was growing down there in Ellijay?

A. Yes sir.

Q. 190. You never studied the cultivation of rye, did you?

A. No sir.

Q. 191. Nor the diseases of rye?

A. No sir, but I know smoke disease on rye when I see it. I saw it come there and effect it.

Q. 192. You don't claim that rye was killed down, it was fine looking rye?

A. It had plenty of straw, plenty of head, but it didn't have anything in the head.

434 Q. 193. Don't you know it is a fact that for a short time back there has been a fungus disease in rye which prevents the head from filling out?

A. I never heard of it.

Q. 194. You don't know that your description covers that disease exactly?

A. That covers the situation all through North Georgia, and in my territory.

Q. 195. You don't know whether the rye is in the same fix elsewhere?

A. I don't know about that, I am only speaking right here, what I saw.

Q. 196. You don't know that it was smoke did that, do you?

A. Most assuredly I do.

Q. 197. You know it?

A. Yes sir, I saw it settle on it.

Q. 198. When did it settle there?

A. Along in the early part of the season when the rye was in bloom.

Q. 199. The smoke settled in the early part of the season, but the rye grew on?

A. It grew on, yes sir.

Q. 200. It never wilted?

A. Well, I don't know that I would say that.

Q. 201. This rye made a fine head?

A. The size of the head, yes sir, but there was nothing in it.

Q. 202. You know with absolute certainty that smoke did that?

A. I believe so. If I was as certain *as* of my future salvation as I am of that, I wouldn't give religion much concern.

Q. 203. So you are really more certain about that than you are of your own salvation?

A. I certainly am.

Redirect examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. Mr. Shippen, you have been a citizen of North Georgia for some years?

A. Yes sir, eighteen years.

Q. 2. Have you conferred with and talked with other citizens of North Georgia about conditions?

435 A. Yes sir, a great many of them, and with Governor Carroll, Governor Smith and Governor Slaton.

Q. 3. You are interested in this case?

A. I certainly am.

Q. 4. Vitally?

A. Yes sir, because I feel our life's work and investment, our whole life's work depends on this case.

Q. 5. You are interested as a land owner and citizen of Georgia?

A. I certainly am.

Q. 6. Do you know J. A. Drake?

A. Yes sir.

Q. 7. State whether or not he has been in North Georgia talking to witnesses and preparing the case?

A. He certainly has, he has handled this case absolutely. While I have made some little suggestions, he has run this case and is running it now. I am not in control of it.

Q. 8. He has run it independent of you?

A. Absolutely, because he has not put all the men we brought on the stand who would testify as to damage around them, where it has been done.

Q. 9. Now, Mr. Shippen, there is an arbitration agreement between the State of Georgia and the Tennessee Copper Company?

A. Yes sir.

Q. 10. That contains a provision or an agreement for the controlling of the smoke fumes through the growing season?

A. Yes sir. I talked with Governor Slaton and the members of the Legislature who had that matter under advisement at the time it was put through, and I know the same consideration, the same that influenced the State of Georgia to execute that agreement was the

specific provision that they were to control their fumes from April 10th until October 1st, that they would agree to put no fumes over on us, that was the main consideration.

Q. 11. State whether or not the Ducktown Company has entered into any such agreement?

A. There was the same sort of proposition made to the Ducktown Company and they positively refused to care for their fumes and treated us with contempt and refused to even treat with the State of Georgia.

Q. 12. What has been her attitude towards the State?

A. One of contempt, as if the State had no rights at all, that they would run, and the State of Georgia had to take it.

436 Q. 13. Now, you were asked about the value of lands, your lands, one hundred and eight thousand acres of timber land, is timber and lumber higher now than eighteen years ago?

A. We bought first and second class poplar eighteen years ago, which we have since sold that same poplar for one hundred and twenty five dollars.

Q. 14. Is the increase in value due to the timber upon the land?

A. Yes sir, to a great extent.

Q. 15. Would it have increased if the timber had been killed on your land, the remaining timber have increased to such extent, even if the timber had been killed?

A. Yes sir, beyond that.

Q. 16. With regard to that tall stack down there, the Tennessee Copper Company's state whether or not the smoke zone was extended or doubled by the erection of that stack?

A. I think that high stack does throw the fumes further into Georgia. They claim up there that it would remedy,——

By Counsel for Defendant: Just answer the question, don't give any of your beliefs.

Q. 17. It carries it further than before the high stack was erected?

A. Yes sir.

Q. 18. That is the effect the tall stack has?

A. Yes sir, it spreads it over a larger territory, sent it down on us.

Q. 19. Have you seen or heard of any records being filed by the Ducktown Company except what Mr. Lamoreaux filed?

A. I didn't hear him testify.

Q. 20. You didn't hear him state that they didn't bring any books to file here, and we would have to come and look at them.

A. I think I went away before his testimony was completed, I heard something of that kind.

Recross-examination.

By Counsel for Defendant:

Q. 1. You were asked about the Ducktown Company treat-
437 ing Georgia with contempt, do you know anything about that?

A. I do.

Q. 2. Have you not seen the correspondence between the attorney general and Mr. Miller?

A. I have been present at one or two conferences where we had Mr. Miller with us, and have seen your associate counsel and we got absolutely no satisfaction out of them. What they would do or wouldn't. They said they were doing no damage.

Q. 3. Don't you know that the Ducktown Company offered to let the State of Georgia select a commission of scientist- of ability, men who had no interest in the matter, wholly fair, and let them come on the ground and make an examination and abide by their verdict?

A. I never heard of any such thing.

Q. 4. And didn't they agree that they would pay the expense of any such Board of Commissioners?

A. I never heard of any such thing as that, if that proposition was made, I never heard of it.

This witness traveled in coming to Blue Ridge and returning home, 34 miles.

(Thereupon the further taking of testimony in this case is adjourned until August 20th, 1914.)

(Met pursuant to adjournment on August 20th at 1 o'clock P. M.)

The next witness, J. G. DEWEES, having first been duly sworn, testified as follows:

Direct examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. How old are you?

A. Fifty years old.

Q. 2. Where do you live?

A. Gilmer County, Georgia.

438 Q. 3. Whereabouts in Gilmer County?

A. I live four miles northeast of Ellijay.

Q. 4. What is your settlement known as?

A. Northcutt.

(It is agreed that the witness lives seventeen and one hald miles from Copperhill and twenty and one fourth miles from Isabella.)

Q. 5. How long have you been living there?

A. Four years.

Q. 6. How long have you lived in Gilmer County?

A. About fifteen years.

Q. 7. Do you occupy any position in Gilmer County with the Farmer's Union?

A. Yes sir.

Q. 8. What is that?

A. President of the Union for the County.

Q. 9. What is your business there?

A. Teaching and farming.

Q. 10. School teacher?
A. Yes sir.
Q. 11. How long have you been a school teacher?
A. In that county?
Q. 12. Or elsewhere?
A. I have taught twenty four years.
Q. 13. How long have you taught in Georgia?
A. About fifteen years.
Q. 14. How long have you been farming?
A. Ever since I was large enough to farm.
Q. 15. State whether or not the Farmers' Union is a National organization?
A. Yes sir, it is.
Q. 16. How long has it been in existence, if you know?
A. I couldn't tell you right now.
Q. 17. Approximately how long, has it been as long as ten or twelve years?
A. Yes sir.
Q. 18. Now, have you ever had occasion to examine the timber and forests of your section of the country?
A. Yes sir, I have investigated it very closely.
Q. 19. Have you ever been to the plant of the Ducktown
439 Copper Company and the Tennessee Copper Company?
A. No sir I have not.
Q. 20. State whether or not you have ever seen any smoke in your section of the county?
A. Yes sir.
Q. 21. Can you see it and smell it?
A. Yes sir.
Q. 22. What does it look like?
A. Well, it has the appearance of blue smoke?
Q. 23. What does it smell like?
A. Sulphur.
Q. 24. Have you ever seen that smoke coming through the forests or into the forests and timber?
A. Yes sir.
Q. 25. Have you ever examined the timber and forests immediately after it was there, or a short time after?
A. Yes sir, I have noticed it.
Q. 26. What would you find the condition of the timber and leaves to be?
A. Well, when the smoke settles in there, for some time, and if we have moisture, we can see the effect of it on the leaves, slightly discolored, some worse than others.
Q. 27. Have you seen any smoke out on the garden pacthes this summer, on vegetables?
A. Yes sir.
Q. 28. What vegetables do you raise there?
A. Tomatoes, cabbage and beans and various vegetables.
Q. 29. Have you had occasion to examine them within a short time after you had seen the smoke?

A. Yes sir.

Q. 30. What would that condition be?

A. I found the tomatoes were hurt badly, seemed to be very serious.

Q. 31. What would be the appearance of the plants?

A. Something like a scald, and the young beans too.

Q. 32. Did you ever examine the forests back six or seven years ago, from that time up to the present?

A. Well, I have noticed the timber.

Q. 33. What is the condition of the timber and forests now, as compared to that time?

A. Not so good as it was then, where I have noticed it.

440 Cross-examination.

By Counsel for Defendant:

Q. 1. Mr. Dewees, it is a fact that you never noticed any smoke in there at all until about eight years ago?

A. I couldn't say for sure just how long it has been.

Q. 2. It has been something like six or eight years?

A. About that.

Q. 3. Prior to that time you didn't notice any smoke in there at all?

A. No, sir.

Q. 4. Wasn't it just about that time that the Tennessee Copper Company's high stack was erected?

A. Just about the time the Tennessee Company constructed that high stack I noticed the smoke first.

Q. 5. Prior to that time you didn't notice it, the first was just after that time when you first begun to notice the smoke in there?

A. Yes, sir.

Q. 6. How is it this year in comparison with last year?

A. It is worse this year than last year.

Q. 7. How was it in 1913 in comparison with 1912?

A. I couldn't tell you, I don't remember.

Q. 8. Don't you remember how it was in 1912 in comparison with 1911?

A. No, sir, I don't remember that.

Q. 9. Now, Mr. Dewees, is it not so that for three or four years after you first began to notice it come in there, it was much worse than any other time?

A. Since that, yes, sir, until this year, that is my opinion, I wouldn't say for sure, but that is the way I observed it.

Q. 10. For three or four years after the Tennessee Copper Company's high stack was con*trs*ucted the smoke was worse than any other times since that, except this year?

A. Yes, sir, I think we had more smoke this year than for some years before this.

Q. 11. Do you know when the acid plants were put in?

A. I do not.

Q. 12. You don't know why it got better until this year?
441 A. No, sir, I never kept up with it, I don't know exactly.
Q. 13. I believe you say you are the President of the Farmers Union for your County?
A. Yes, sir.
Q. 14. Your Union, I believe is having a number of suits brought by various members, are they not?
A. Yes, sir.
Q. 15. Do you have charge of those suits?
A. I kind of have oversight of the business in our County, I have not got charge of them, if I understand your question, they are in the hands of lawyers.
Q. 16. Are those lawyers employed by your union?
A. Yes, sir.
Q. 17. Now, of course, this is a matter your local union has charge of?
A. Yes, sir, the county.
Q. 18. It is not national so far as that employment is concerned?
A. No, sir, not directly.
Q. 19. Now you say that smoke smells like sulphur, what do you mean by that?
A. It has a sulphurous smell, like sulphur burning.
Q. 20. Did you ever put any sulphur in the fire and smell the fumes coming up?
A. Yes, sir.
Q. 21. Do you mean it smells like that?
A. Yes, sir, but not so strong.
Q. 22. There is something in it that you can detect that reminds you of burning sulphur?
A. Yes, sir.
Q. 23. Of course, you don't know the ingredients of the smoke.
A. I do not.
Q. 24. It is kind of blue in appearance?
A. Yes, sir, and has a sulphurous smell, seems to be a little something else, not exactly like pure sulphur, but that is the odor it has.
Q. 25. Then there is another peculiarity of the odor other than that which comes from burning sulphur?
A. Yes, sir, that is the way it seems to me.
Q. 26. Did you ever notice the smell of the smoke emitted by locomotives when burning bituminous coal?
A. Yes, sir.
Q. 27. Can you detect any kind of sulphur smell in that?
442 A. I hadn't noticed that.
Q. 28. Didn't you notice along with the soot, the burning carbon that there is also a sulphur odor?
A. Perhaps there is but I hadn't noticed it, I had failed to notice that.

Redirect examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. State whether or not the State organization of the Farmers Union has taken up this question on behalf of the local union and its members, some years ago?

A. There was a suit, or sort of movement first by the State officials.

Q. 2. Has the Farmers Union a Legislative Committee, and has that committee and president of the Union taken it up with the Governor and State authorities?

A. Yes, sir, we have had help from that source all along.

Q. 3. State whether or not a delegation from the County and State organizations have waited upon the legislature in regard to the movement?

A. Yes, sir.

(This witness traveled thirty two miles in coming to Blue Ridge and returning to his home.)

The next witness, B. F. WEEKS, having first been duly sworn, testified as follows:

Direct examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. How old are you?

A. Fifty two years old.

Q. 2. Where do you live?

A. I live in this county.

443 Q. 2. Whereabouts?

A. Down near Ducktown, two miles from Ducktown.

Q. 3. Just over the Georgia line?

A. Yes, sir.

Q. 4. How long have you been living there?

A. A year and a half.

Q. 5. How long have you lived in Fannin County?

A. Forty years, about.

Q. 6. Have you ever been to the Ducktown and Tennessee Copper companies plants?

A. Yes, sir.

Q. 7. Did you smell the smoke there?

A. Yes, sir.

Q. 8. Have you ever seen any smoke in your neighborhood where you live?

A. Yes, sir.

Q. 9. You can see and smell it?

A. Yes, sir.

Q. 10. State whether or not it is of the same appearance and odor as the smoke that comes from these two copper plants?

A. Yes, sir, it is.

Q. 11. Have you seen it there this year?

A. Yes, sir.
Q. 12. To what extent?
A. It has been there frequently.
Q. 13. Have you seen it there in the past year?
A. Yes, sir.
Q. 14. Have you ever seen that smoke settle in a clump of timber or garden patch at any time in the past few years?
A. I have.
Q. 15. Have you ever examined the timber or garden patch a short time after it settled on there?
A. I seen it a few months after it was there, and I have seen it a day or two.
Q. 16. What would be the condition of the plant and the leaves at that time?
A. Some of them would change their color and drop off and fall to the ground.
Q. 17. Can you remember any date on which you saw the smoke last year, 1913?
A. I couldn't be positive as to the exact date, somewhere about the 11th or 12th.
Q. 18. What month?
A. Of May.
Q. 19. How do you fix that date?
A. The way I remember, I had been to Chattanooga.
Q. 20. What for?
A. I went as a witness for Mr. Vestal, it was on Sunday after I came home.
444 Q. 21. Did you notice any damage from that visit of smoke?
A. Yes, sir.
Q. 22. To what?
A. Well, it wasn't a great deal of it, there was some.
Q. 23. To what was the damage done?
A. On the garden, the beans.
Q. 24. Has the smoke been frequently in your section?
A. Yes, sir.
Q. 25. For how many years?
A. I couldn't be exact about it, but for several years?
Q. 26. Could you fix any date, this year approximately when you saw the smoke.
A. I could not.
Q. 27. Have you ever been out with Mr. Guass?
A. I have been at his place.
Q. 28. About when was that?
A. I don't remember just what date it was.
Q. 29. About how long ago?
A. It has been about a month ago next Sunday.
Q. 30. That would throw it back in the latter part of July, the 24th or 25th?
A. Yes, sir, in July.

Q. 31. Did you have occasion to look at the plant of the Ducktown Sulphur Copper & Iron Company?

A. We was on his piazza and the smoke came from there strong, stronger than usual that day. We was talking about what it was doing and had done, and he said to me,—we went up on the mountain or hill above his place so we had a fair view of the Tennessee Copper Company's plant. We could see just where the smoke from it was going and we could see the smoke coming from the other plant. While we were not in sight of the other plant exactly, we couldn't see the plant but we could see the smoke coming from that direction, the smoke *in* up on the river and coming by his place, we could see the smoke there.

Q. 32. That was the smoke from the Ducktown Copper Company which you saw coming from where you were standing?

A. Yes, sir.

Q. 33. Have you had occasion to look at the timber and crops this year?

A. Not a great deal, I have been out just a little.

Q. 34. Did you notice the conditions when you were out?

A. I seen some sign of smoke.

Q. 35. What do you do and where do you live?

A. I have a little store there, and the post office.

445 Q. 36. You are the postmaster there?

A. Yes, sir.

Cross-examination.

By COUNSEL FOR DEFENDANT:

Q. 1. How long have you lived near Ducktown?

A. Well, I have been where I am at now, about a year and a half, I guess.

Q. 2. Where did you live before you moved there?

A. Six or seven miles further up the country, up the creek, have a farm up there.

Q. 3. Did you ever live right in Ducktown?

A. No, sir.

Q. 4. Did you ever work at either of the furnaces?

A. No, sir.

Q. 5. So you never have worked with either one of the companies?

A. No, sir, I never did.

Q. 6. You have been about Epworth a good deal, have you not?

A. Yes, sir.

Q. 7. You have been around there this year?

A. Yes, sir, I live there.

Q. 8. You are the postmaster at Epworth?

A. Yes, sir.

Q. 9. Don't you know the early part of the season was exceedingly dry?

A. Yes, sir, it was dry.

Q. 10. Didn't you have one of the worst droughts ever known in that country for that season of the year?

A. It has been very dry.
Q. 11. Didn't it hurt vegetation a great deal?
A. I suppose it did.
Q. 12. Didn't it dry up the potatoes and other garden truck?
A. I should think it had some effect on them.
Q. 13. Didn't that drought break up on the 4th of July?
A. No, sir.
Q. 14. On what date?
A. It was after that, I don't know just how long.
Q. 15. Then there wasn't any shower in Epworth on the 4th of July?
A. I don't think so, I don't remember it.
Q. 16. The drought lasted about six weeks?
A. I don't know how long, it was very dry.
Q. 17. A good deal of complaint in the country about the crops and gardens?
A. It was dry weather over there.
446 Q. 18. Now, do you remember, Mr. Weeks, when that Tennessee Copper Company's stack was built, that high stack?
A. I don't know just how long it has been built, I remember when it was going up.
Q. 19. You remember when it was done?
A. Yes, sir, it was done perhaps some five or six years ago, might have been longer.
Q. 20. Don't you remember that after that was put up there was considerable more damage done to timber over in North Georgia than there was before?
A. Well, it might have reached out a little further.
Q. 21. How far into North Georgia did you ever come to look at the timber?
A. At any time?
Q. 22. Yes, sir.
A. Well, I have been, since that high stack was put up I have been all over the county numbers of times.
Q. 23. Do you know when those acid plants were put up?
A. Yes, sir.
Q. 34. Well, between the construction of the high stack and when the acid plants were constructed, wasn't the smoke very much worse, didn't it do more damage?
A. I couldn't remember about that particular time. My recollection is there was not much change in the time between the erection of the two.
Q. 25. You really do not know when it was?
A. No, sir, I do not.
Q. 26. Now, you spoke about one particular date when you thought you noticed smoke, I believe you say it was along about the 12th of May, 1913?
A. That is my recollection, it was on Sunday.
Q. 27. And you had come from Chattanooga?
A. Yes, sir, just a day or two previous.
Q. 28. You had been down to Chattanooga?

A. Yes, sir.
Q. 29. You were attending court?
A. Yes, sir.
Q. 30. As a witness for Mr. Vestal?
A. Yes, sir.
Q. 31. On what day of the week did you get back?
A. I am not positive, I had been home a day or two only.
Q. 32. You said it did a little bit of damage to something, what was it?
A. Garden peas, English peas.
Q. 33. How big a patch of peas did you have?
447 A. The patch was not large, it wasn't my garden. My attention was called to it by the other party.
Q. 34. When was it you noticed the garden peas looked like they were a little *but* damaged?
A. On the next day.
Q. 25. Had you noticed them the day on which the smoke was there?
A. No, sir, the smoke was over there very strong—I know I remarked about it.
Q. 36. Don't tell that——
A. The smoke was there.
Q. 37. You didn't notice the smoke that day?
A. No, sir.
Q. 38. You didn't notice it the day before?
A. No, sir.
Q. 39. Or the day before that?
A. No, sir.
Q. 40. You never had given any attention to the peas until the morning after?
A. No, sir.
Q. 41. They seemed to be a little bit damaged, were they brown or not?
A. They were brown, considerably brown. I have been used to the damage, it had been done very recently just a short time, I am positive it was done the day before.
Q. 42. You think you can tell to the hour when it was done?
A. No, sir, not that close.
Q. 43. Can you tell to the day?
A. Yes, sir, I think so.
Q. 44. You are a smoke expert?
A. I am pretty well acquainted with it—no, sir.
Q. 45. What else was in the garden besides the garden peas?
A. I don't remember.
Q. 46. Were there any potatoes in it?
A. I don't know, I guess it was a common garden.
Q. 47. Was there any beans in it?
A. I don't remember.
Q. 48. Any tomatoes?
A. I don't remember what was in it.
Q. 49. Can you remember anything except the peas?

A. I remember my attention was called to it, the peas.
Q. 50. But everything else was in the garden that usually grows in gardens?
A. I suppose there was.
448 Q. 51. Don't you know there was?
A. I guess there was.
Q. 52. It wouldn't have been a garden if it hadn't been growing other stuff?
A. It could be.
Q. 53. Do you call a pea patch a garden?
A. It could be a garden and be entirely peas..
Q. 54. You mean if you plant a place ordinarily used for a garden, the garden is where you grow various kinds of vegetables?
A. Usually, sometimes there are quite a lot of things and sometimes not so many.
Q. 55. Any way, you saw some peas you say was damaged?
A. They were damaged.
Q. 56. Nothing else in the garden that attracted your attention?
A. Not that I remember of.
Q. 57. I believe you say these peas were brown?
A. Beginning to brown, or white color, I don't remember.
Q. 58. You said they were brown, now were they brown or white.
A. They were kind of brown.
Q. 59. You knew pea leaves turn brown from dry weather?
A. I don't know that they do.
Q. 60. You are a smoke expert, now don't you know that pea leaves turn white?
A. I couldn't tell you, I never told you I was a smoke expert.
Q. 61. You think you can tell when things are injured by smoke the day after?
A. I don't claim to be an expert.
Q. 62. Then why do you give such positive opinion?
A. I said being used to the smoke up there, seeing it frequently, I was sure the damage was done by smoke. I cannot tell just exactly when it was done.
Q. 63. That makes you a smoke expert?
A. I don't know.
Q. 64. Don't you know that the smoke from the furnaces turn all the pea leaves white, and not brown at all?
A. I don't know that.
Q. 65. Has not that been your experience?
A. I never saw any peas before, my attention was never called to any before that.
449 Q. 66. Then those were the only peas you ever saw that had been browned by smoke?
A. Peas of that kind are not extensively grown.
Q. 67. Then you don't know they were hurt at all?
A. I am positive they were.
Q. 68. I am not asking you that, they are the first peas you ever saw of that kind browned by smoke?
A. Yes, sir.

Q. 69. You have not seen any since of that kind?
A. I don't know that I have.
Q. 70. You never saw any before?
A. I don't know that I ever did before.
Q. 71. So you really don't know anything about it.
A. I have seen it on other peas we raise, common field crops, I saw it at home there.
Q. 72. Did you see it on garden peas?
A. Yes, sir, English peas.
Q. 73. So you know it is a fact that the smoke turns the garden peas white?
A. I know that was smoke signs.
Q. 74. But you don't know the smoke signs on garden peas?
A. Yes, sir, I say that was smoke signs on the gardens peas.
Q. 75. That is the only time you ever saw it on garden peas?
A. The only time my attention was ever called to it.
Q. 76. You are two miles from the Tennessee Copper Company's plant?
A. About that.
Q. 77. You have one of the best oak groves in North Georgia there at Epworth?
A. There is a nice grove there.
Q. 78. Nothing has hurt it?
A. I see some signs in it, not as much this year as before.
Q. 79. The trees are in perfect healthful condition?
A. I couldn't say that, I don't know whether they are or not, they are not, some of them.
Q. 80. Have you any corn crops around in that country?
A. Yes, sir.
Q. 81. Any meadows?
A. No, sir.
Q. 82. There are good crops right there by the furnaces in Ducktown?
A. I have not seen them.
Q. 83. That dry weather hurt the gardens?
A. I expect it did.
450 Q. 84. Now, Mr. Weeks, you know it is a fact that since those acid plants were put in there, the damage has not been anything like it was before?
A. How is that?
Q. 85. You know that since the acid plants have been established there has not been anything like the amount of damage to vegetation and timber as there was before?
A. I don't know just how it is down near the stacks of the companies at the time they were erected, but for several years after that I lived seven or eight miles further away. It was worse out on my farm after they were erected than ever before.
Q. 86. After what was erected?
A. The high stack.
Q. 87. You didn't understand me. I said the acid plant.

A. Well, no, it has not been as bad all together for the last two or three years as it was before.

Q. 88. Don't you know Mr. Weeks that after they have been extracting that acid from the sulphur fumes it has not been near as bad?

A. I couldn't say about that. I have seen quite a lot of damage this year, while I have not been out much.

Redirect examination.

By COUNSEL FOR DEFENDANT:

Q. 1. State whether or not it is true that there can be parts of the forests damaged and other portions not damaged?

A. Yes sir.

Q. 2. Did you notice damage there yourself?

A. Yes sir.

Q. 3. State whether or not that was smoke damage?

A. Yes sir, considerable signs.

Q. 4. When was that?

A. Two or three weeks ago.

Q. 5. This year?

A. Yes sir, this month.

Q. 6. Have you ever noticed any smoke damage on the gardens and crops prior to this year?

A. Yes sir.

Q. 7. State whether or not you attributed the damage this
451 year to the drought you have had?

A. No sir.

Q. 8. Did you ever noticed anything damaged besides those particular peas you saw there, that is not the only thing you have seen damaged?

A. No sir, that is not the only thing, I cannot say that I noticed whether or not anything else was damaged in the garden.

Q. 9. That is what he asked you, I was asking you if there was anything else?

A. Yes sir, sure, it killed my potato patch last year, I never got a potato at home, ten miles away, not a one.

Q. 10. Did it have any effect on your corn last year?

A. Well, I don't know, I wasn't out on the farm much last year.

Q. 11. You never lived there enough?

A. No sir.

Q. 12. You lived ten miles away?

A. Yes sir.

Recross-examination.

By COUNSEL FOR DEFENDANT:

Q. 1. Where was that potato patch injured last year?

A. Where I lived and up at the farm too.

Q. 2. You didn't get any potatoes anywhere?

A. I got just a few down home, just a few.

Q. 3. Where was your farm?
A. Seven or eight miles away.
Q. 4. Near what place?
A. Up next to the mountain, up about ten miles.
Q. 5. It is up near Mineral Bluff?
A. Up near Higdon's Store a mile and a half.
Q. 6. Right west of Chestnut Gap?
A. Yes sir.
Q. 7. What time in the year was that—when did you plant your potatoes?
A. They were planted in the early spring, about April.
Q. 8. Did you put in any claim for damages?
A. Yes sir.
Q. 9. How much did you put it in for?
A. I don't remember just exactly the amount.
Q. 10. What did you get?
A. Forty dollars is my recollection.
Q. 11. For damages to your potatoes?
452 A. And other crops, timber and such like.
Q. 12. So the Tennessee Copper Company paid you for that?
A. Yes sir.
Q. 13. Did Mr. Vestal get you to come here?
A. I got a subpœna to come here.
Q. 14. You have talked with Mr. Vestal about coming here?
A. We have talked about the smoke occasionally.
Q. 15. Didn't he talk to you about it especially before you came here?
A. No sir, he did not.
Q. 16. Didn't Mr. Vestal tell you he was going to have you as a witness?
A. I was willing to come on my own account?
Q. 17. Didn't he tell you that?
A. I don't remember that he talked about it, we have talked about the smoke, that is the chief conversation around where I live.
Q. 16. Especially with Mr. Vestal?
A. And others.
Q. 19. Is not Mr. Vestal here now, present?
A. I saw him right there, I guess you are acquainted with him.

The next witness, J. G. ADAMS, having been duly sworn, testified as follows:

Direct examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. How old are you?
A. Fifty two years old.
Q. 2. Where do you live?
A. Atlanta, Georgia.
Q. 3. What is your profession?

A. Photographer.
Q. 4. How long have you been engaged in that?
A. Twenty five years.
Q. 5. Whereabouts?
A. 40½ Whitehall Street.
Q. 6. You have been there that long?
453 A. I have been there about twenty years.
Q. 7. What sort of photographic work have you done?
A. Well, I have done all kinds I ever heard of, except microscopic photography, I have not done much of that.
Q. 8. Where has your work extended?
A. All over the State of Georgia and some of Alabama. In Georgia and Tennessee.
Q. 9. Mr. Adams, I will ask you to state whether or not you were employed by the State of Georgia to take some photographs in connection with the case now pending?
A. Well, Mr. Shippen employed me, I think he said it was for the State of Georgia.
Q. 10. You say you were engaged through Mr. Shippen?
A. Yes sir.
Q. 11. And he stated it was for the State of Georgia?
A. Yes sir.
Q. 12. Have you visited Fannin County and Gilmer County Georgia for the purpose of making photographs?
A. Yes sir.
Q. 13. Have you made such photographs?
A. Yes sir. I didn't know when I was in Gilmer County or Fannin County only as the Counties were mentioned to me.
Q. 14. When was that?
A. I think it was the second of August, the first of August—the second I believe, I have a memorandum.
Q. 15. You can refer to that.
A. It was the third of August I came up here.
Q. 16. In 1914?
A. Yes sir.
Q. 17. Who went with you on that trip?
A. Mr. Vestal and Mr. Frank Shippen and Mr. Vestal's son and Mr. Sharpe.
Q. 18. What sort of camera did you take with you?
A. The size that made eight by ten field, the lense zias astigmatic, that means correct lines, right angles.
Q. 19. Is that a telescopic lense?
A. It is not referred to as that, but they are that, draw back and forth like a telescope.
Q. 20. How is that regarded by your profession?
A. As one of the finest made, the highest of any in that class of lenses.
Q. 21. That is the camera you used in making all the pho-
454 tographs you have brought here?
A. Yes sir.

Q. 22. I hand you a photograph marked No. 1, state whether or not that is your number?

A. That is correct.

Q. 23. Did you make that photograph?

A. Yes sir.

Q. 24. Do you know from your notes or memorandum where that was taken?

A. Yes sir, I will have to refer to my notes to be sure about it, I cannot remember (looking at book) that was made on the way from here, Blue Ridge, here—No. 1 was made on the Blue Ridge and Copperhill road, Eighth District and Second Section about seven miles southeast of Copperhill, made on August 4th, and I file this photograph as Exhibit No. 1 to my testimony.

Q. 25. You are not a botanist or forester?

A. No sir.

Q. 26. What does this particular one show?

A. It shows the dead top across the forest there and the dying trees, that is a lighter shade here, the dead and dying trees with leaves on them, shows the trees that have been in leaves, and the leaves are dying or dead.

Q. 27. That is just on the horizon line?

A. Yes sir, down in front these young trees show they are dead and dying, and in the distance, the horizon shows the dead tops as far as the photograph shows. The photograph which I file as Exhibit No. 2 was taken one mile south of Copperhill looking north, the same section as No. 1.

Q. 28. What does that show?

A. Well, that is to show the smoky condition in the distance.

Q. 29. What is this stack—the Tennessee Copper Company?

A. Yes sir, the Tennessee Copper Company's stack. I don't think the Ducktown smoke shows, it was so smoky there you couldn't see about it.

Q. 30. What day was this taken on?

A. August 4th. The photograph which I file as Exhibit No. 3 to my testimony is on a hill southwest near Hopewell Church, looking toward Cowpen Mountain.

Q. 31. What does that show?

A. It shows the smoky conditions all through there, and the growth of timber near here, dead trees, small and stunted growth.

455 Q. 32. Are the trees shown in the photograph dead or dying?

A. Some of them.

Q. 33. In the background h*eer*?

A. Yes sir.

Q. 34. This was taken on August 4th?

A. Yes sir. The photograph which I file as Exhibit No. 4 to my testimony was on a certain iron bridge across Fighting Town Creek one fourth of a mile east of Medola.

Q. 35. On what day was that taken?

A. August 4th.

Q. 36. What does this photograph show?

A. That shows the dead trees, the dead tops all through there and the dead young trees, some trees down in the foreground are dead.

Q. 37. What is the color of those trees?

A. Light brown.

Q. 38. In the photograph how do they appear?

A. Well, they are lighter than the dark green.

Q. 39. How does the dark green show up on the photograph?

A. It shows black and white.

Q. 40. And the dead leaves show lighter.

A. Yes sir.

Q. 41. That was taken on what day?

A. August 4th. The photograph which I exhibit as No. 5 to my testimony was taken one quarter of a mile north of Higdon's Store, lying west of Reddic Mountain near the top.

Q. 42. What do the light colored patches show?

A. The light colored patches show dead trees that have died with the leaves on them recently and the outlines show the dead tops that were there dead everywhere up through there.

Q. 43. That was taken on what day?

A. August 4th. The photograph which I file as Exhibit No. 6 to my testimony was taken on Barnes Mountain ten miles southwest of Ducktown, Lot 172 9th and 2nd in Fannin County.

Q. 44. What does this show?

A. That shows the dead tops of trees and dying trees, this was made under adverse circumstances, made against a strong light, it is not so plain as the other.

Q. 45. State whether or not any—in all of these photo-
456 graphs the light shows up the dead and dying trees?

A. Yes sir.

Q. 46. When was that made?

A. On August 4th.

Q. 47. And then.

A. The photograph which I file as Exhibit No. 7 to my testimony is on the Barnes Mountain ten miles southwest from Ducktown, looking southeast.

Q. 48. What does that photograph show?

A. That attempted to show the stack, the stack being dark does not show, only shows a white house which was near there, or the plant one or the other.

Q. 49. What does that show in the back ground?

A. That is all it shows.

Q. 50. What does that show as to the general condition of the atmosphere?

A. Smoky, that is why you couldn't see the stack.

Q. 51. Was it smoky on that day?

A. It was, yes sir.

Q. 52. On what day was that made?

A. August 4th. The photograph which I file as Exhibit No. 8

was taken on Lot 172, 9th and 2nd, looking east on Barnes Mountain, east on Millsaps Mountain.

Q. 53. What does that show?

A. That shows the hills or mountain there and the bushes and a number of dead trees on the mountain. It was some distance away, looking through the trees this way you see them, but that mountain is some distance through there, but it shows a number of dead trees.

Q. 54. That was taken on the 4th of August?

A. Yes sir. The photograph which I exhibit as No. 9 to my testimony was taken on Barnes Mountain looking east on the same section.

Q. 55. That was taken on the same day?

A. Yes sir.

Q. 56. What does that show?

A. It shows dead and dying timber, you can see the injured and dead trees, I think they have their tops dead, they were not live trees, just recently died. Of course, it shows the dead tops all through there. The photograph which I exhibit as No. 10 to my testimony was made on August 5th on Lot 210, 9th and 2nd, a little west of Flat Top.

Q. 57. Do you know how far that was from the furnaces?

457 A. Between nine and ten miles from the furnaces or plants.

Q. 58. What does that show?

A. It shows the smoke had settled in that valley between where we were standing and the other mountain.

Q. 59. What does that haze show?

A. That shows the thickness or density of the smoke at that time.

Q. 60. Is that a true representation?

A. Yes sir, that is correct, as near as it can be made right at us is the—this mountain was about fifty or sixty yards away from where we were, and the next point down here is several miles.

Q. 61. That was taken on what day?

A. August 5th. The photograph which I now exhibit as No. 11 was made on Lot 186, 9th and 2nd, on th- west side, looking southwest on Barnes Mountain.

Q. 62. How far is that from the plant?

A. I don't remember just how far it was, I don't know that I made mention of that.

Q. 63. What does that show?

A. The large timber, the very large timber we had just gotten, to, a number of the trees had just recently died, dead tops and some entirely dead. These right here are the ones whose leaves have just turned light.

Q. 64. What day was that taken on?

A. August 5th. The photograph which I exhibit as No. 12 to my testimony was made on Lot 173, 9th and 2nd, on Pigeon Mountain, northeast of Blue Ridge on August 5th.

Q. 65. How many miles away from the plant?

A. About the same distance as the last one.
Q. 66. What does that show?
A. That shows a number of dead and dying trees.
Q. 67. How are they indicated?
A. By the light blotches, shows the dead and dying. Of course, it does not show everywhere, some trees are entirely dead through there.
Q. 68. To what distance away from them would that lenses you used show up on the photograph?
A. You mean its capacity for distance?
458 Q. 69. Yes sir.
A. Show anything as far away as a star, as far away as the star Sirius. The photograph which I now exhibit as No. 13 to my testimony was taken on August 6th on Lot 23, 9th district and 2nd section, looking a little south of west at Granny Marr Mountain.
Q. 70. What does it show?
A. The dead trees and dying trees, one here, down in the valley, and a number of trees have died recently. A number of trees entirely dead, of course, the dead tops you see that everywhere you get an outline against the sky. The photograph which I exhibit as No. 14 was made from the top of Granny Marr Mountain on Lot No. 24, looking toward Copperhill and five miles away—about six miles from the Ducktown plant I believe.
Q. 71. What day was that taken on?
A. August 6th, 1914.
Q. 72. What does that show?
A. The smoky condition there. We tried to locate the Ducktown Copper Company's plant, you can see the smoke rising there.
Q. 73. Does that smoke rise from the Ducktown Copper Company's plant?
A. Yes sir, the plant is obscured.
Q. 74. What it is obscured by?
A. Smoke.
Q. 75. Could you or not at the time that was taken, see the Ducktown Copper Company's plant?
A. Occasionally we could, when the smoke would shift we could see it distinctly.
Q. 76. What prevented youn from seeing it at other times?
A. The smoke. The photograph which I file as Exhibit No. 15 to my testimony was taken on Lot 54, 9th district and 2nd section, looking across Tumblin Creek.
Q. 77. What does that show?
A. Looking across Tumblin Creek it shows the dead and dying timber.
Q. 78. What day was that taken on?
A. August 6th. A. The photograph which I file as Exhibit No. 16 to my testimony was taken on Lot 28, 9th district and 2nd section, on Tumblin Creek.
Q. 79. What day was that taken on?

A. August 6th.

459 Q. 80. What does that show?

A. Large timber dead.

Q. 81. What are those?

A. They are hemlocks, those tall trees, the two trees of which the tops are not shown are not dead, in the center of the photograph. The photograph which I file as Exhibit No. 17 was taken on Lot 27, 9th and 2nd, looking southeast one quarter of a mile from where the last photograph was made—No. 16.

Q. 82. Taken on what day?

A. August 6th.

Q. 83. What does that show?

A. That shows the dead and dying timber. These trees down here where the light spaces are shows they are dead. Dead leaves on them, and dead tops all through there. The photograph which I Exhibit as No. 18 to my testimony is from Burnt Store Church three and one half miles from the Ducktown Copper Company's plant.

Q. 84. On what day was that taken?

A. On August 6th.

Q. 85. What does that show?

A. That shows thick smoke through there settled all through the country as far as we could see.

Q. 86. Is that a true representation of the smoke conditions on that day?

A. Yes sir. The vertical black streak on the right there is not smoke, but a defect in the plate, but the general hazy condition is caused by smoke.

Q. 87. What is that white spot just below the vertical black streak which you referred to?

A. I have not got any memorandum on that, I don't know what it is.

Q. 88. The white part there?

A. That is one of the plants.

Q. 89. Just below the line and east from the edge of the photograph?

A. Yes sir. The photograph which I file as Exhibit No. 19 to my testimony was made from near Hopewell Church looking east.

Q. 90. On what day?

A. The seventh of August.

Q. 91. About how far from the plants of the Ducktown Copper Company and the Tennessee Copper Company?

A. About two and one half or three miles.

Q. 92. What does that show?

A. That shows the smoke as it drifted into the valley toward Georgia. It shows the North Carolina Mountains from the

460 top, over the top of that smoke.

Q. 93. Is that white streak up through there smoke?

A. Yes sir.

Q. 94. It has the appearance of a cloud?

A. Yes sir, it shows the furnaces over the otp. The photograph

which I file as Exhibit No. 20 to my testimony is of the Ducktown plant.

Q. 95. On what day was that taken?

A. The 7th of August.

Q. 96. What does that show?

A. It shows the plant at close range, and the smoky conditions around there.

Q. 97. Is that what the haze in the photograph is due to?

A. Yes sir. The photograph which I file as Exhibit No. 21 to my testimony is the same plant looking north, taken the same day, within an hour or so after the other one.

Q. 98. What does that show?

A. The same conditions as far as smoke conditions are concerned. The thickness of the smoke around it.

Q. 99. Is the haze in that photograph due to the smoke?

A. Yes sir. The photograph which I file as Exhibit No. 22 to my testimony was taken south of the plant of the Ducktown Company looking south toward Georgia.

Q. 100. Taken on what day?

A. August 7th.

Q. 101. What does it show?

A. That shows the general smokey conditions, the barren soil—especially the barren soil east and the washings on the hills. No. 23 seems to be absent. 23 and 24 were the same and we just omitted 23 because it was a duplicate of 24.

Q. 102. State about 24.

A. That is a view of the Tennessee Copper Company's plant.

Q. 103. On what day was that taken?

A. August 7th.

Q. 107. What does it show?

A. It shows the plant. This was probably about half or a quarter of a mile from the plant looking north—northwest.

Q. 108. What does it show as to soil?

A. It is a barren soil and the hills have been washed very much, and it shows the amount of smoke coming from the acid plant.

461 Q. 109. What is this here (Indicating on photograph)?

A. That is smoke rising from the Ducktown Copper Company's plant. The photograph which I file as Exhibit No. 25 is a view from over the line in Georgia, a view of the Tennessee Copper Company's plant, and shows the general conditions the same as in No. 24, and the location of this smoke here.

Q. 110. About four inches to the right of the photograph there appears a little slot, what is that?

A. That indicates the position of the Ducktown Copper Company's plant.

Q. 111. Is that smoke from the plant?

A. Yes sir, smoke from the Ducktown Company's plant.

Q. 112. I will ask you to state if you observed the soil and the hillsides about the two plants?

A. I did.

Q. 113. State whether or not the photographs shows accurately the conditions, and what the conditions appeared to be.

A. Yes sir, they were made to show the correct conditions around the plants and it was absolutely barren, there was no herbage, but of course, there was a little green stuff growing,—There was a little green stuff growing off some distance from the plants, but right around the plants it was absolutely barren.

Q. 114. Did you, as you passed through the forests of Georgia, observe the general condition of them?

A. Through the forests of Georgia?

Q. 115. Yes sir.

A. You mean on this trip?

Q. 116. Yes sir.

A. You say did I observe the general conditions?

Q. 117. Yes sir.

A. Yes sir, that is what I did.

Q. 118. What was the condition?

A. Well, the forests seem to be dying in every direction as far as I went on this trip.

Q. 119. Have you been in other forests?

A. Yes sir.

Q. 120. As compared to other forests, would you undertake to say what the condition of this forest was?

A. Yes sir, from what I have observed it was in bad condition as compared to healthy forests I have passed through.

462 Q. 121. Do the photographs which you have exhibited as Exhibits to your testimony show the isolated spots or the general conditions of the forests?

A. It is a true representation of the general conditions.

Q. 122. State whether or not you selected isolated parts or spots of the forests from which to take your photographs?

A. I did not.

Q. 123. How did you select them?

A. From points where I could get a view. Perhaps there are places that would show equally as bad as this but I could not get a photograph of that on account of the poor light, underbrush and such as that.

Q. 124. Did the gentleman who conducted you direct you where to take them, or did they tell you where they wanted you to take them?

A. They told me where I was. They of course, conducted me to places showing this condition, at certain distances from these plants.

Q. 125. They gave you *rou* distances, or you got your distances from them?

A. Yes sir.

Q. 126. I believe you say you took all these photographs personally?

A. Yes sir.

Q. 127. Are these photographs enlargements?

A. They are.

Q. 128. How are they made, without going into detail?
A. Well, we have a large camera, almost identical with the smaller ones, only a larger size, and the paper is placed in a plate where the plate would be in that camera, and the picture is made by the light shining from the place already made.
Q. 129. From the original negative?
A. Yes sir.
Q. 130. Do these enlargements show accurately or not the photograph as it was made?
A. It shows it exactly, only it is larger.
Q. 131. Are they as accurate as the original negative?
A. Yes sir, they are.
Q. 132. It is a print from the original negative?
A. Yes sir, that is all.

Cross-examination.

By Counsel for Defendant:

463 Q. 1. You, of course, are not a botanist?
A. No sir.
Q. 2. Or a chemist?
A. No sir, only in photographic c-emistry.
Q. 3. As a matter of fact you have followed the profession of photography pretty much all your professional life?
A. Yes sir.
Q. 4. How long have you been a photographer?
A. About twenty five years.
Q. 5. You have not made a specialty of the study of forestry have you?
A. No sir.
Q. 6. Did you ever take many photographs in forests?
A. Yes sir, a great number of them.
Q. 7. Where?
A. Well, I have made them for geographical purposes, and for showing the mountain scenery, and for foresters showing the size of growing trees all through Georgia, several places in Georgia.
Q. 8. You have never of course, made any study of the diseases of trees?
A. No sir.
Q. 9. You have seen dead trees all through the forests?
A. Yes sir.
Q. 10. You come across dead trees everywhere?
A. Some dead trees in all forests.
Q. 11. In some you will find more than in others?
A. Yes sir.
Q. 12. You have seen forests far away from the Ducktown section where there is quite a number of dead trees?
A. Well, not a great number of dead trees, I don't remember ever seeing a forest where there was such a large number of dead trees, but, of course, there are more in some places than in others.
Q. 13. You never went through the Cumberland Mountains?

A. No sir.

Q. 14. Nor along the western part of East Tennessee?

A. No sir.

Q. 15. You don't know about the trees there?

A. No sir.

Q. 16. I believe in looking over your photographs, most of the dead trees which you have shown are either white pine or hemlock, are they not?

A. Well, quite a number of oaks.

Q. 17. But by far most of them are white pine and hemlock?

A. Most of them are.

Q. 18. You don't know it to be a fact that the hemlocks
464 are dying in other places?

A. No sir.

Q. 19. And that the white pines are also dying in different places far away from here?

A. No sir, of course, those trees are dead, but I don't know what killed them.

Q. 20. Who was with you?

A. Mr. Vestal and Frank Shippen and Mr. Vestal's son, John Vestal, and Mr. Sharpe.

Q. 21. They guided you through the mountains?

A. Mr. Vestal principally guided us through the mountains.

Q. 22. That is they took you to certain general sections on the mountains?

A. Yes sir.

Q. 23. And left you to take your photographs in those sections?

A. That is the idea.

Q. 24. You didn't suggest to them to go somewhere else in the mountains.

A. No sir.

Q. 25. They just guided you to general sections and you took your photographs in those sections?

A. Yes sir.

Q. 26. Now, Mr. Adams, were your exposures instantaneous or were they prolonged?

A. Well, yes and no. In some cases they were instantaneous, depending upon the conditions of the light.

Q. 27. Now, could you tell which ones of these photographs were taken instantaneously? Have you any idea?

A. Yes, I could,——

Q. 28. What photographs were they, and do the photographs themselves show?

A. No, they wouldn't show, no one else could tell. Just be my memory of the conditions.

Q. 29. Will you glance down your memorandum and designate those taken instantaneously to the best of your recollection?

A. (Looking at book:) If you allow me, I could do it more accurately by glancing at the photographs.

Q. 30. Well, do that.

A. Those made instantaneously are No. 9, 11, 13, 14, 19, 24, 25, 1, 4, 5, 6, 8, 10, 15, 16, 17, 18, 22.

Q. 31. About how long did you expose the plates in the photographs?

465 A. The exposures varied from one second to three seconds.

Q. 32. What kind of plates did you use?

A. What make?

Q. 33. Yes sir.

A. It was a plate made by the Traynor Company.

Q. 34. Does it have any special names?

A. No, they go by numbers, A. B. C. that corresponds to B.

Q. 35. They are just ordinary plates used by photographers?

A. Yes sir, used for pictures and views also.

Q. 36. They are not what is commonly know- as ortho-chromatic plates?

A. No sir.

Q. 37. Did you ever use a color screen?

A. I did not.

Q. 39. What is the object of the color screen?

A. The object is to give the /re-ative value of colors to better advantage, but from my experience it does not do that, that is why I do not use it.

Q. 39. It is the purpose of the color screen to give the exact color, the exact hue?

A. To come nearer giving the colors values, what I mean is this. The light is stronger on certain objects with one color screen and stronger on other objects with another color screen, for instance, I might take a red colored screen and make a picture of the United States flag, it wouldn't give any red stripes at all, the red stripes would take white.

Q. 40. Why is that?

A. I am unable to explain, it is because, I think,—it is explained in the catalog, the formula—it is,—I don't believe I could give you an intelligent definition of it, I cannot afford to try to tell.

Q. 41. Anyway, this color screen which is an attachment which has been invented for which it is claimed that when used it makes the pictures more accurate?

A. As to color values, yes sir.

Q. 42. You don't use that.

A. I find that it is not true.

Q. 43. I didn't ask you that, I ask you if you used it?

A. No sir, I do not.

Q. 44. But a great many photographers do use it?

A. I do not know, I never saw one who did.

466 Q. 45. Did you ever practice color photography?

A. No sir.

Q. 46. Did you ever take one of those pictures that showed the exact color of the pictures you took?

A. No sir.

Q. 47. Did you ever try that?

A. I say color photography is a branch of the science, of the art, rather, with which I am wholly unfamiliar,—I cannot say that I am unfamiliar with it, but I know this much about it, that it has never been done.

Q. 48. You know a thing has never been done about which you know nothing?

A. I cannot say that I know nothing about it, I know it has never been done.

Q. 49. You never tried it?

A. Yes sir, because I never think it could be done. All color photographers you ever saw or had referred to you is mechanically done.

Q. 50. You never climbed the Alps?

A. No sir.

Q. 51. Do you judge from that it cannot be done?

A. No sir, but I have seen so many evidences or demonstrations of this I know it has never been done.

Q. 52. That is no such thing as taking a photograph of a red object which shows red in the photograph?

A. With a single exposure.

Q. 53. By taking one picture that cannot be done?

A. No sir, not in photography.

Q. 54. Yet you never tried it, but swear it cannot be done?

A. I have had it demonstrated to me time and again, but I have never seen it done. I have never seen it accomplished. If you will allow me, I will explain what that so-called color photography is.

Q. 55. If you want to, but I didn't ask for an explanation.

A. All right, but nobody can make a colored photograph with a photographic plate, they do not take color.

Q. 56. What kind of plates is used?

A. They use several plates to make the different colors.

467 Q. 57. Now, Mr. Adams, you take an ordinary dark picture like these present here, the different shades on the photograph depend altogether on the amount of light reflected from the object which you are taking?

A. Not altogether,—May I illustrate?

Q. 58. Certainly.

A. You make a photograph of ordinary exposure, and get a plate of normal or ordinary strength, you can take that plate and make it so you cannot see anything in the foreground at all.

Q. 59. That is a manipulation inside of your gallery?

A. The same thing as printing it over, only those are correctly printed and the others would be incorrectely printed, you couldn't print anything if it was exposed to the light long enough, and,—

Q. 60. You mean you can go into a dark room and make a photograph show anything you want to?

A. No sir.

Q. 61. What did you mean?

A. I mean just what I say. I could have exposed these very prints here, I could have exposed them to the light long enough to

turn this down here (Indicating) so dark that it wouldn't show any detail at all, that is it would be nearly flat.

Q. 62. You mean the atmosphere there?

A. Yes sir, there would be only the black part.

Q. 63. The longer you expose a photograph the smokier appearance you will put into it?

A. No sir, the darker.

Q. 64. The more hazy?

A. Yes sir, the more hazy appearance.

Q. 65. You can expose all your photographs until it looks like night-time?

A. Yes sir, these,——

Q. 66. You could have pointed your instrument toward the Ducktown Basin in midday light and exposed it until the whole picture would have looked like night, or just after night had come down?

A. No, I thought you was talking about the picture. You take the negative when you expose the plate.

Q. 67. I don't care about that, I am talking about taking a picture. You could have taken it at midday, and by exposing it for some length of time, it would be more hazy and look like it was taken after night time? Is that true?

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A. I don't think I can answer the question that way. If you expose the plate long enough there wouldn't be any detail at all, couldn't tell it was made for a picture at all.

Q. 68. The longer you expose it the more shadow you put in the picture?

A. No sir.

Q. 69. The darker the picture will be?

A. No sir.

Q. 70. Is it a good light picture?

A. Yes sir.

Q. 71. Does it get lighter?

A. Yes sir.

Q. 72. Why will it appear absolutely dark if exposed still longer?

A. You are talking about plates, plates and pictures are absolutely different. I can take a properly exposed plate and make a photograph as black as night or make it light from properly exposed plates, but if I expose my plate a long time, the normal exposure, I would have no picture at all.

Q. 73. Then the amount of haze would depend largely on the length of time you are in printing the picture from the plate, what do you mean by that when you speak of getting a darker picture from an exposure?

A. Yes sir, it gets darker, but you can put in,——

Q. 74. What is — you expose to make it darker, the photograph or the plates?

A. The photographs are plates after the plates are made.

Q. 75. Now, going back to what I asked you a while ago you say that color in the photograph is not dependent largely upon the amount of light reflected from the object?

A. Well, of course, it has nothing to do with the color of the photograph, the amount of light of the object has nothing to do with the color of the photograph.

Q. 76. It makes it either light or dr*a*k, not the exposure of the plate,——

A. Not the exposure of the plate, it is the print of the photograph from the plate.

Q. 77. Do you mean to say a light object does not show different on the plate from a dark object?

A. Yes sir, it does show different.

469 Q. 78. Is that because the light object ref*e*lcts more light than the dark one?

A. Yes sir.

Q. 79. Does not — make quite a difference if the object, the picture of which you are taking reflects much or little light?

A. It makes very little difference sir.

Q. 80. Well, then please tell me why a light object will not have the same shade in the photograph as the dark object?

A. It is just like looking against a wall, the wall there is white above the wainscoting, below is a different color, and if you make a photograph, one will show lighter than the other.

Q. 81. Because the object above is lighter.

A. Yes sir.

Q. 82. Well, why is it the object will show lighter in the picture. These photographs here are not color photographs, and you don't undertake to show colors at all?

A. No.

Q. 83. Why is one lighter than the other?

A. Photographic colors depends on light and shade, they only take from black to white, all gradations between black and white. You could take a black object and make it a distinct photograph of the object as easy as you can of the white one.

Q. 84. That is because there are light objects around it?

A. Of course there has to be something to contrast it with to show that.

Q. 85. Then why is it the light wall will show light in a picture when the dark wall will show dark?

A. The wall is light.

Q. 86. Is not that because the light wall reflects and the dark wall does not?

A. Probably.

Q. 87. Don't you know that is so, or do you know anything about it?

A. That is my observation.

Q. 88. Do you or not know it is because the light wall will reflect light and the dark will not?

A. It is not a question of reflection at all.

Q. 89. Don't you know that photography of that kind depends all together on reflection of light?

A. No sir.

Q. 90. You have no such things as reflection of light on
470 an object in photography, is that true?
A. I don't think I get the idea of it.
Q. 91. If photography does not depend upon reflection of light, tell why you can see that wall, do you know why you can see that wall?
A. Yes sir.
Q. 92. Why?
A. Because I have natural vision.
Q. 93. Suppose you had the best eyes on earth, would that alone enable you to see the wall?
A. No sir.
Q. 94. What is it about light which causes you to see the wall, is it not because the light — reflected from the wall to the eye?
A. I suppose so.
Q. 95. Don't you know so?
A. (No answer.)
Q. 96. Don't you know that much about physics?
A. I don't judge photography that way.
Q. 97. Is it not true that you don't know anything about the science of photography at all?
A. If that is what you are trying to get at, I suppose I don't.
Q. 98. You don't know that shades in photographs are the results of reflection of light you are photographing?
A. The reflection would be on the plate.
Q. 99. What I am getting at is this, don't you know that a healthy green leaf reflects more light than a brown dead leaf?
A. It does not, I know it does not.
Q. 100. Did you ever measure it?
A. I most assuredly have.
Q. 101. When and how?
A. I have been measuring it for twenty-five years every few days of my life by the photographic process.
Q. 102. And yet you say that a dead leaf will reflect more light than a green leaf?
A. It depends on the color of the leaf, a dead black tree or leaf will not reflect as much as something lighter.
Q. 103. Don't you know that brown reflects less light than green?
A. No sir.
Q. 104. You say that red reflects less than green?
471 A. It depends on the shade of red.
Q. 105. Is not brown one shade of red—is not brown nearer the shade of red than green is?
A. I don't think so, not the color values of it, it is not.
Q. 106. Did you ever see light reflected from a black surface?
A. Of course. I don't see any reflected light from black objects there (Indicating) but if there was a black object there that had a shiny surface to it, it would reflect light.
Q. 107. What colors show up lightest in a picture?
A. Well, of course, white is first, that is not a color, light blue

shows next lightest, pink, light green, any of the lighter tints except red or yellow, yellow shows up very dark. Any shade of red or yellow shows dark.

Q. 108. Is not brown a shade of red?

A. Some of them are.

Q. 109. Brown is not in the rainbow, it is not one of the elementary colors?

A. No sir.

Q. 110. So as a matter of fact brown is a shade of red, is that true?

A. Yes sir.

Q. 11. Then don't you know it would show darker than green?

A. No sir, I do not.

Q. 112. Well, maybe, it was those particular trees that you took would not show dark?

A. Maybe so.

Q. 113. Anyway, you pretend that these light spots are brown trees?

A. Some are.

Q. 114. What other colors are shown by those lights spots than brown?

A. Well, the ground shows lighter, where you see ground through the — that shows lighter usually.

Q. 115. What was the color of the ground anyway, was it sandy?

A. Some was rock, barren rock.

Q. 116. Now, I show you photograph No. 11, do you pretend that those smaller trees in the near foreground there were killed?

A. Which is that? (Looking at picture.) No sir.

472 Q. 117. What was the color of those leaves?

A. They are either light green or dark green, very shiny, they catch the light and throw it up.

Q. 118. So it is that in that foliage on the smaller trees in the foreground of No. 11, were all in perfectly healthy condition and were green, is it not?

A. I cannot say all were that way, some are not.

Q. 119. I wish you would point out one that is not, one that shows different?

A. I don't know that I can point out one, but I know some were not as healthy as others, but some were unhealthy here.

Q. 120. Those are laurel leaves,——

A. Those are laurel leaves, or something with a very highly polished leaf.

Q. 121. These leaves were green?

A. These laurels are very bright green.

Q. 122. The lightest foliage shown in any place in that picture is the foliage there on No. 11, that is true?

A. I guess it is, I have not examined that,—but that is very light.

Q. 123. Those leaves which show light there were green?

A. Most of them were, yes sir.

Q. 124. Don't you know that is because there was a good deal of light reflected from those leaves?

A. Sure, yes sir, The light there was high, coming from top, the camera being above them reflected the light back on it.

Q. 125. Now, of course, in No. 2, the light places shown there was thr ground, I believe you say, and that is because the ground was sandy?

A. Yes sir, that is the ground, that is the space through here.

Q. 126. That picture does not show any dead trees at all?

A. No sir, just a small growth there.

Q. 127. So it is, that all the growth shown in that picture was alive, and the ground there, and the foliage was all green, wasn't it?

A. No, not all.

Q. 128. Show me any of it that was killed?

A. I don't know that I can find any at all, but I know that some of the smaller bushes were dying.

Q. 129. Point out anything the smoke—point out any-
473 thing in that picture that shows to be dying?

A. Well, there is one here by this house. (Indicating) I think that is dead there.

Q. 130. Your picture does not show it?

A. Not much.

Q. 131. So you are not testifying from facts that are shown by the photographs at all?

A. It shows lighter than some of the other trees.

Q. 132. But still some of the others show lighter than it.

A. I don't see any that does.

Q. 133. You see a good many that shows as light.

A. Not much difference, very little.

Q. 134. Now, that picture does not show any dead trees at all? Now, that picture which does not show any dead trees at all is the picture which shows the Tennessee Copper Company's plant and quite a scope of Country lying south of that plant, is not that true?

A. I think it is lying south of the plant, yes sir.

Q. 135. I show you a picture which shows quite a scope of country lying immediately south of the Tennessee Copper Company's plant?

A. Yes sir.

Q. 136. And the foliage on all of those trees is shown to be green and in a healthy condition, so far as the picture is concerned?

A. I will state this further about that,——

Q. 137. Answer my question, and then state.

A. I beg pardon.

Q. 138. (Stenographer repeats question).

A. I didn't say it was all healthy, I said that there was some exception.

Q. 139. But the picture does not show them to be unhealthy?

A. Well, that is all right, what I was going to say, it was made when the sky was overcast with clouds on those trees.

Q. 140. Well, still if the sky was overcast, a tree that would reflect less light on a bright day than another one, would reflect less light than the other when the sky was overcast?

A. It don't reflect so much.

Q. 141. That is none of the trees would reflect so much?

A. No sir.

Q. 142. Now, Mr. Adams, in Picture No. 9, I see a big dead tree on the left hand side, you have no idea what killed that tree?

474 A. No sir, it was old and the bark was off.

Q. 143. And there are a number of other trees shown to be stripped of foliage that have been dead for some time you don't know when they died?

A. No sir, some of the smaller twigs have died recently, I could tell by that. They hadn't been dead so long as those in the corner.

Q. 144. That is those have smaller twigs, and you judge them to not have been dead so long as the one in the corner?

A. That is the idea.

Q. 145. What kind of tree is that in the corner?

A. I think it was a chestnut.

Q. 146. You don't know, of course, whether it is true that chestnut is dying through the country, all through the southern country?

A. No sir.

Q. 147. Did you take any notice of whether there had been any forest fires?

A. Yes sir, I did, I noticed it.

Q. 148. That there had been?

A. I noticed that there had been forest fires, and always avoided getting them in the pictures, I never made any evidence of forest fires.

Q. 149. That is this year?

A. Yes sir, within a year I should judge.

Q. 150. These trees might have been killed by forest fires some years ago?

A. Might have been, must have been some time ago. Evidently this had been dead a number of years.

Q. 151. Have you any definite recollection about the location of those trees claimed to be dying in this picture No. 9?

A. Please state the question.

Q. 152. (Stenographer repeats question.)

A. You mean the location of them on the picture?

Q. 153. Yes sir.

A. I don't remember where they were on the picture.

Q. 154. That is you stood before those trees, and independent of this picture, have you any recollection as to where any one of these trees with brown leaves were located?

A. No sir.

Q. 155. Now, as a matter of fact you are just guessing when you say that the photographs showed the trees that had brown leaves, is that so?

475 A. I don't think you could say I am guessing. The light trees show the dead and yellow leaves, some of those leaves were almost white.

Q. 156. You just said a while ago that yellow color would show dark, you swore that a while ago?

A. Yes sir.

Q. 157. Well, you swear now that it shows light?
A. I said when they were brown they were almost white, they take lighter than light green leaves do.
Q. 158. You swore a while ago that yellow leaves didn't show anything, but that light leaves,——
A. Did I swear those were yellow leaves?
Q. 159. You will have to rely upon your recollection.
A. Didn't you make the answer to it.
Q. 160. He has the answer all right. Now, did all those leaves when killed, turn white?
A. If they have been dead any length of time they are nearly white.
Q. 161. So those leaves you saw up there on the mountain with Mr. Vestal and Mr. Frank Shippen that are claimed to have been killed by smoke, they were all white?

By COUNSEL FOR PLAINTIFF: We except to that part of the question assuming that Mr. Frank Shippen testified, or Mr. Vestal claimed to the witness that they had been killed by smoke, or that any claim was made to him, and there is no evidence on which to base such a question.

Overruled. Appeal prayed and granted.

Q. 162. (Stenographer repeats question.)
A. No, I never said white, I said very light and very nearly white.
Q. 163. They were not brown?
A. No sir.
Q. 164. And they were not yellow?
A. They were a very light yellow.
Q. 165. But they were white?
A. No sir, I never said white.
Q. 166. Nearly white?
A. Yes sir, nearly white.
Q. 167. All of them?
A. Not all of them.
476 Q. 168. And what wasn't brown were white?
A. No sir.
Q. 169. You never saw any trees said to have been killed by smoke before?
A. No sir.
Q. 170. This is your first experience?
A. Yes sir.
Q. 171. And really you don't know that this smoke does brown leaves, do you?
A. No sir.
Q. 172. Mr. Adams, do you know anything about the different kinds of trees?
A. Well, something, yes sir.
Q. 173. Were you raised in the woods?
A. I was raised in the country, I can pick out the pine, the oak, the hickory and such as that.
Q. 174. Were not a good many of these photographs taken around the edges of old fields?

A. No sir.

Q. 175. Some of them were, were they not?

A. I don't recollect but one, there may have been others, but I don't remember but one now. I took one looking toward Granny Marr Mountain, made a picture right across a field.

Q. 176. No, 13 shows a fence, which shows that it was taken right at the edge of a field?

A. Yes sir, that is the one I am speaking of, there may be others.

Q. 177. Now, Mr. Adams, in regard to No. 14, in the distance between the upper part, the right of the photograph, there is shown a furnace, now as a matter of fact that is the Tennessee Copper Company's furnace is it not? Look at it?

A. This one here, you mean?

Q. 178. Yes sir.

A. Is that the one I said I was not certain about?

Q. 179. I am not sure whether it is or not.

A. I think it is. I am almost positive that is the Tennessee Copper Company, I think that is the one I said was the Ducktown Copper Company, but was mistaken. My memorandums stated it was the Ducktown Company but I think it is the Tennessee Copper Company's plant.

Q. 180. In what direction from the Tennessee Copper Company was the point where you were located when this photograph was taken, this No. 14?

A. (Looking at Book.) We were looking northeast, nearly
477 north, I think. We were south of the plant.

Q. 181. As a matter of fact this photograph does not show the Ducktown plant at all, or any smoke issuing from it?

A. No sir, we could see it but the smoke was so dense we couldn't bring out any photograph, it don't appear in the photograph.

Q. 182. That is that when there is any haze of any consequence in the atmosphere, you can see an object that the picture will not show?

A. Sometimes, that is the case.

Q. 183. Now, in regard to that smoke in the atmosphere, there are two stacks, two furnaces, that is each plant has a furnace stack?

A. The one at the Ducktown Company's plant seems to be a very small low stack, a small stack there, a chimney. This other one has a stack about three hundred feet high.

Q. 184. Then there are the stacks coming up from the power houses which emit smoke, is that true?

A. I think so, yes sir.

Q. 185. Then there is the Burro-Burro Mines, a stack there that emits smoke?

A. I am not familiar with them, I don't kno- what they were if I should see them.

Q. 186. There are eight or ten stacks which emit smoke?

A. I could see smoke in several places.

Q. 187. Those were emitting smoke—that was coal smoke, black smoke?

A. Some of them were.

Q. 188. As a matter of fact, the smoke that comes out of the furnace stack is the lightest smoke in the basin, it has a lighter color?

A. Yes sir.

Q. 189. So, that haze in that basin there, that smoky condition must have been produced from the dark smoke emitted from these various mines, is not that so?

A. I couldn't tell you.

Q. 190. You know something about smoke, you live in Atlanta, the smoke from those stacks around there in the basin, the smoke from the two plants some distance apart,——

478 A. I don't know how far apart they were, or how many there were of them.

Q. 191. Anyway, all this smoke went up in the atmosphere and diffused?

A. You could see it rising up there in the basin.

Q. 192. And the smoke from all of them got together?

A. Probably so.

Q. 193. And all the smoke that was emitted and produced there, it made a haze all over the Ducktown Basin?

A. Yes sir, it did, helped to do it.

Q. 194. You live in Atlanta?

A. Yes sir.

Q. 195. You have seen times when there was so much smoke you could hardly see across the street?

A. Yes sir.

Q. 196. Coming from those stacks around there?

A. Yes sir.

Q. 197. A lot of manufacturing plants, Atlanta, is quite a manufacturing city?

A. Yes sir.

Q. 198. You have seen the time when you couldn't take the photograph of a house across the street because of the smoke?

A. Not without a long exposure and then I wouldn't get a good photograph.

Q. 199. That on account of the smoke?

A. Yes sir.

Q. 200. Were you ever in Pittsburg, Pennsylvania?

A. No sir.

Q. 201. Now, this photograph, No. 19, was intended to show the smoke along that valley?

A. Yes sir, I don't know what the valley is called, they called it the valley between where we were standing and the mountain range that showed there (Indicating) on the east.

Q. 202. Now that was smoke floating out of the Ducktown Basin?

A. Yes sir.

Q. 203. How much furnace smoke was in that, and how much coal smoke, you don't know?

A. I don't know, but it seems lighter than other smoke though. You can trace it all along there.

Q. 204. Do you know what makes the furnace smoke lighter than the other smoke in the clouds, in color?

A. I do not, only what I have been told, and I am not testifying what I have been told.

Q. 205. Now, coming to No. 20, which appears to be a photograph of the Ducktown Plant, how near were you to that plant when you took this picture?

479 A. About fifty yards, I think, maybe more, between fifty and one hundred yards.

Q. 206. That is what makes it show up so large?

A. Yes sir.

Q. 207. Now, toward the left of the picture, is that the stack of the Ducktown furnace?

A. I take it to be the stack.

Q. 208. Of the furnace?

A. Yes sir. That is all I can say.

Q. 209. That show relatively the highet of that plant to the stack?

A. Yes sir.

Q. 210. And I believe this photograph also shows that the tank, the water tank is higher than the plant or stack either?

A. I think that is correct. Have to make allowance for this, I think nearer the plant, about the middle part of this thing, we were standing on lower ground, that would make it look like it was higher than the buildings—but it is higher than the buildings, I think.

Q. 211. Now, taking photograph No. 21, that shows more clearly that the tank is higher than the building?

A. Yes sir.

Q. 212. How near were you to the building when you took No. 21.

A. Thirty or forty yards further away than when we took No. 20.

Q. 213. Something like ninety yards?

A. About a hundred yards, I reckon.

Q. 214. Now the furnace stack is so low that the photograph fails to show it entirely?

A. You don't see it from this side, no sir.

Q. 215. Were you not standing on the highest hill around the plant when you took it?

A. I cannot say whether the highest hill or not.

Q. 216. It was on a hill?

A. In or near the road as it comes around up here. (Indicating) we were on a hill.

Q. 217. What is this showing in the right hand side of the picture, are those telephone poles?

A. I think those were on one of the buildings, I couldn't say positively, I don't remember.

Q. 218. You don't know whether those are telephone poles or stacks from the power house?

A. I don't think they are telephone poles, they wouldn't look that large at that distance.

480 Q. 219. Do you know where the power house of the company is located?

A. I think it is to the right up here, to the right of where we were making the pictures, looking north.

Q. 220. No. 21 is looking north?

A. Yes sir, I think that is called the power house, I think somebody mentioned that was the power house.

Q. 221. They have six stacks to the power house?

A. I didn't count them.

Q. 222. They had several?

A. Yes sir.

Q. 223. And you think it is those stacks showing in the photographs here?

A. Yes sir.

Q. 224. They burn coal in the power house, their engines and boilers, to operate their machinery?

A. I suppose so, coal or coke, I don't know which.

Q. 225. If they burn coal that would produce a heavy black smoke?

A. Yes sir.

Q. 226. Do you know whether bituminous coal has sulphur in it?

A. Yes sir, it has some.

Q. 227. Did you ever smell it?

A. Yes sir.

Q. 228. Very distinctly?

A. Yes sir.

Q. 229. Can you smell sulphur in smoke oftentimes around Atlanta?

A. Yes sir, if you get very close to it, you can.

Q. 230. You have smelled it in the smoke around Atlanta?

A. When near to it.

Q. 231. You mean when near to the furnace where it is coming from?

A. Yes sir.

Q. 232. Now, No. 24 shows the Tennessee Copper Company's plant.

A. Yes sir.

Q. 233. How far were you away from this plant when you took this photograph?

A. A little further in one than the other.

Q. 234. No. 24 was how far away?

A. I should saw a little over a quarter of a mile.

Q. 235. How far away were you when you took No. 25?

A. About one hundred yards further.

481 Q. 236. That is the reason this plant does not show up very much larger than the Ducktown Copper Company's plant, is it not, you took the one close up to it and the other was taken a quarter of a mile away?

A. That is it, the further away you get the smaller it will look.

Q. 237. If you had taken the Tennessee Copper Company's plant fifty yards away, it wouldn't have all shown on the picture, would it?

A. I don't know, I think it is a larger plant, a longer plant than the Ducktown plant.

Q. 236. Didn't it have the appearance of being very much larger than the Ducktown plant?

A. I don't know, the Ducktown plant looks pretty big to me.

Q. 237. Was that the first time you ever saw either one of them?
A. Yes sir.
Q. 238. Standing fifty yards away from the Ducktown plant, it looks about as large as the Tennessee Copper Company's plant when you stand a quarter of a mile away, is that about it?
A. No, you see the Ducktown plant takes up the entire picture practically and this one takes up one third.
Q. 239. But if you had been fifty yards, that is fifty yards away from the Tennessee plant, you couldn't have gotten it all on that picture?
A. I think so, I think it would have pulled it up, if you could have gotten this same view.
Q. 240. Now this picture No. 24 shows several other stacks emitting smoke, at least a few, some there which were no- emitting smoke at that time, is that so?
A. Yes sir, there is one, I think that is one there.
Q. 241. It shows other stacks not emitting smoke too, is this one?
A. I don't know.
Q. 242. There is one?
A. Yes sir.
Q. 243. There is one?
A. I don't think this is *an* stack, but a tower of some kind. There is one here that don't show any smoke.

Q. 244. Now, your photographs also show that immedi-
482 ately around this plant the land is barren? Of course, you don't know how long it has been barren?

A. No sir, I don't.
Q. 245. You don't know whether the soil has all been washed off, did you notice enough to know that?
A. I notice that one of the photographs shows in a number of places that the soil had been washed off, gulleys and ruts.
Q. 246. There is no indication of any trees or vegetable growth of any kind for several years, was there?
A. The land was practically bare right around the plants there, no indications of vegetation there for some time.
Q. 247. You didn't notice those gardens and lawn- in Ducktown?
A. I did notice one, I noticed a corn patch and one lawn and grass plot near Ducktown in front of somebody's residence.
Q. 248. I believe photograph No. 5 is another photograph taken near an old field, wasn't it?
A. Yes sir, that is another one.
Q. 249. In the foreground there was corn field?
A. Yes sir.
Q. 250. Do you see anything wrong with the cornfield?
A. Well, it was not very good corn, I don't know from what it was caused.
Q. 251. It hadn't grown large?
A. I think it was about grown.
Q. 252. But it hadn't grown large?
A. No sir, not large corn.
Q. 253. What was its condition?

A. It was yellow an- had some spots on the blades. In a number of cases I noticed the dry leaves.

Q. 254. You don't mean the whole field had turned yellow?

A. No sir.

Q. 255. You saw here and there yellow blades?

A. No sir, just spots as if something had caused the spots.

Q. 256. Spots on the fodder?

A. Yes sir.

Q. 257. The fodder was green where there was no spots?

A. Yes sir, it was right green, not a dark green.

Q. 258. You don't know what kind of land it was, whether the land was poor or not?

A. I don't know, I couldn't tell.

483 Q. 259. Did the green blades show up very light?

A. Very light.

Q. 260. Along in front the fodder is light?

A. Yes sir, that reflects the strong light.

Q. 261. Now take No. 12, I see some bushes in the foreground of this picture*m* what were they—was that laurel?

A. (Looking at photograph.) No sir, that is not laurel I don't know what they are.

Q. 262. They were,——

A. They had a shiny leaf surface like laurel.

Q. 263. Those leaves were green and nothing wrong with them?

A. No sir, nothing wrong that I know of.

Q. 264. They show up light?

A. Yes sir, the light is reflected from them.

Q. 265. Now in No. 15 there are some bushes in the foreground on which the leaves show light they were green also were they not?

A. Yes sir, those were,—I think that is some kind the same kind we had before, I don't think it is laurel.

Q. 266. Is that over on the left a young chestnut?

A. No sir. I don't think it is.

Q. 267. You don't know what it is?

A. No sir.

Q. 268. Anyway, they were of nice healthy growth, in good condition?

A. I think they were.

Q. 269. The same is true in No. 16, some light leaves in the front, especially on the left hand side which were green, and show in the picture as light?

A. Yes sir, I think part of this was laurel, that sprig there was.

Q. 270. No. 22, I believe shows the barren surface around in the neighborhood of the furnaces?

A. Yes sir, that was near one of the furnaces.

Q. 271. Was there an earthquake at the time you took that photograph?

A. No, sir, a brainstorm when I went to make the photograph.

Q. 272. What is the cause of that line?

A. I dropped it and broke off a piece.

Q. 273. On this picture No. 5 there appears to be a num-
484 ber of light splotches, not confined to the trees, but it is splotched on the surface of the picture, what caused those light splotches over that picture?

A. I am unable to see anything on the surface of the photograph, there are no splotches that I *can* discover.

Q. 274. Did you or not claim, on your examination in chief those places you claim which are light there*on* which appear light on the photograph was caused by some trees you state were dead.

A. Yes sir.

Q. 275. I take it you don't know really if the trees are dead, do you?

A. If I can judge from the appearance of it.

Q. 276. What part of it?

A. The leaves.

Q. 277. Do you know whether or not it is a fact that the leaves die one year and the next year come out perfectly green all over?

A. They may.

Q. 278. So what you mean is from the appearance of the leaves, the leaves were dying?

A. I don't know that the picture shows that those light spaces,——

Q. 279. Don't you know that the picture shows that those light spaces *are* splotches are not confined to any one tree, and just appear to be splotches on the surface of th- picture?

A. Well, they look like trees, defined to me.

Q. 280. Now, as a matter of fact,—this tree here and this tree, here that is a defined tree, these here,—(Indicating). Any number of them are defined, the outline of the tree, but those here seem to cover places of more than one tree and are not confined to the tree, it looks to me like these trees are outlined or defined in the photograph. Now, those leaves were white?

A. Not white no.

Q. 281. What color were they?

A. Very light.

Q. 282. Nearly white?

A. Nearly white.

Q. 283. *T*hey were not yellow?

A. Slightly yellow.

Q. 284. They were not brown?

A. No sir, not brown, I couldn't say they were brown, nearer tan than brown. They were a light tan in color.

485 Q. 285. Tan is about yellow is it not?

A. No sir, I wouldn't call tan yellow.

Q. 286. You don't have any idea what tanned those trees and made them light?

A. No sir, I never saw them before.

Q. 287. You don't know what kind of trees they were?

A. No sir, I couldn't tell what kind each of them were, as well as I remember there was an oak, pine and hickory there, I didn't think

there was any hemlock, but the general variety of trees in the forests.

Q. 288. The hemlock is a different variety of the fir or pine, is it not?

A. Yes sir, I reckon it is.

Q. 289. Maybe those little splotches got on there in the development of the picture, could they have done that?

A. The whole picture got there in developing it.

Q. 290. Maybe they were the result of the development, and not the result of the brown or white or yellow leaves at all?

A. I couldn't tell you.

Redirect examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. I will ask you to state whether or not you used the best and most approved methods of photography in the taking and developing and printing the pictures?

A. I did, to the best of my ability.

Q. 2. Do you know about how many miles you covered on your various trips through this country, approximately?

A. I should say at least seventy-five miles.

Q. 3. In an automobile?

A. Part of the time, and part of the time we had a conveyance drawn by a mule and part of the time we walked.

Q. 4. You were asked about some pictures being snapshots and more time exposure what is the difference in the relative value
486 of a photograph made from instantaneous and time exposure?

A. You get approximately the same results.

Q. 5. What is the reason you use on one occasion a time exposure and on another occasion an instantaneous exposure?

A. If the weather is bright and during the middle of the day the light is very strong and then we make an instantaneous exposure. If it is dark or cloudy and the light is not very strong, in the afternoon or very early in the morning, we take a time exposure.

Q. 6. Do you do that to make the results of the instantaneous exposure on a bright day show approximately the same as a time exposure would show of the same situation on a day when it was not so bright?

A. We do it to get the best results and it usually has that effect, it shows that effect.

Q. 7. In other words, it depends on whether or not it is a sunshiny day, and you get approximately the same results?

A. Yes sir.

Q. 8. Now, the Cramer plates, is that recognized by photographers as a good plate?

A. Yes sir, one of the best.

Q. 9. Is it or not in use generally?

A. Yes sir.

Q. 10. Does it or not give good results?

A. I think it gives the best results is why I use it.

Q. 11. You were asked about color photography and express- *and*
-sire to e-plain about it, you may do that now?

A. I have nothing to explain that there is a process by which they can get a yellow plate, develop it in such a manner this yellow, when you look through it, it shows the whole thing yellow, and the- by a mechanical or chemical method you can make a plate which shows red. They have another process by which they can make a plate which shows green. When you talk about color photography, you have seen them as you walk along the street, look through the windows, see a parrot on a tree, and that parrot may have a red tuft on its head, the way it is made,—or it may be
487 a gray parrot with a tuft of red on his head, sitting on a green tree.

Well, you take a plate, of a field with green foliage, and cut out everything but the *bows* of the tree, then you cut — everything about the parrot on another *palte* but the red tuft on his head,——

Q. 12. That is the method,——

By Counsel for Defendant: Let him go on.

A. Then you cut everything out on the next plate except the balance of the parrot which takes approximately a color photograph. You put them all together. Then you have the red tuft on the parrot head, the green branches in the tree and that is what is called color photography.

Q. 13. You make the colored photograph from a number *or* combined negatives?

A. Yes sir.

Q. 14. Than can be done only by several different exposures?

A. Yes sir, I have never seen anything,—I have never seen anything else done in the way of color photography. I don't know that I know everything about it, but that has been shown and demonstrated to me, and I have been repeated- solicited to invest in those things for my own profit, but I never could see any profit in it.

Q. 15. State whether or not the methods which you use, the process which you use in obtaining photographs which you have attached to your deposition, is regarded as a good method of showing color values, the conditions of things which they purport to portray?

A. Yes sir, the only method.

Q. 16. When you speak of colors, you mean color values as applied to photography?

A. When I speak of colors, red, white and blue, primary blue, when I speak of colors in photography, I mean the gr-dation from black to white, the color values of the picture.

Q. 17. Is this method a valuable one as showing the true color values?

A. Yes sir.

Q. 18. Some photographs which you have introduced *is*
488 shown a haze for instance No. 22 and No. 18, I will ask you to state whether or not you could by any method part,—by over exposure or under exposure of the plate, or on a negative, produce a

haze like there is on part of that picture in there? Or whether the use of over exposure would tone down the entire picture?

A. Over exposure would tone down or make the whole plate the same way, from the skyline on down.

Q. 19. Then where the haze appears on any one of these pictures, does that or not show the true conditions?

A. It shows the relative conditions between the other places and the haze, the true condition *fo* the,——

Q. 20. No. 22, the one you dropped and broke, the upper two-fifths shows to be dead white, is that the way it was taken at first?

A. No sir.

Q. 21. That shows no atmospheric conditions?

A. No sir. This was badly broken, and after we got enough pieces together to show to the horizon, nothing above was put in there to show, I merely masked off this upp- part and it was not printed at all.

Q. 22. You have the horizon line and probably two inches showing atmospheric conditions?

A. That is right.

Q. 23. Did you or not, in taking these pictures, did you attempt to try to change in any way condition- portrayed by them?

A. I*n* did not.

Q. 24. Did you try to reproduce the exact conditions in the field of exposure?

A. I tried as near as possible to get an exact representation of conditions before me.

Q. 25. I believe you stated the color or tone of the whole picture would depend or be determined in whole by over or under exposure, and cannot be determined in part?

A. Not naturally, you can by some process fix a plate and put in anything you want to. You could have put a house up there if you had wanted to.

Q. 26. Did you or not do that in any of the photographs you have introduced here?

A. I did not.

Q. 27. No. 11, about which you were questioned, the leaves in the foreground, what caused the light conditions there?

489 A. Well, I can illustrate,—if you turn it to the light,——

Q. 28. You state these were green leaves?

A. Yes, sir.

Q. 29. What causes them to show up light?

A. Reflection of the light coming down.

Q. 30. Suppose you take the photograph itself and lay it down at a certain angle, they show up lighter than at other times?

A. Yes, sir.

Q. 31. Then it is a question as to how much the leaves show up, it depends on the angle with which the light strikes it?

A. Yes, sir.

Q. 32. Does the photographs which you have been questioned about, where the trees show up light, state whether or not all the

leaves would show up light, here in the foreground, the ones about which Mr. Fowler asked you?

A. Yes, sir, that light field is due to that.

Q. 33. That is there in the foreground?

A. Yes, sir.

Q. 34. Then the light condition in the back ground, you have described, which you say is due to dead and dying leaves, is that from reflection of light the same as here?

A. No, sir.

Q. 35. So that is a different color from the ones which show light here in the foreground?

A. Yes, sir.

Q. 36. Then it is true that photographs will show in the immediate foreground where the angle is different, a light color on dark green leaves, and the back ground will show the leaves up?

A. In that contrast, but never darker than it is. If all those had been the same color, they would all show up the same color.

Q. 37. What sort of trees and bushes are those in No. 2?

A. Mostly persimmons.

Q. 38. Would you call that a healthy forest?

A. No, sir.

Q. 39. Now, all these photographs here which Gen. Fowler asked you about, and the dead trees through there, and whether or not there was a dead tree here and yonder, state what was the general conditions?

A. Well, there is a general condition of dead trees, more in some places than others.

Q. 40. Was the dead trees, one dead tree here and another
490 half a mile away or something like that?

A. No, sir.

Q. 41. You cannot undertake to enumerate every dead tree you saw?

A. No, sir.

Q. 42. Will or not white smoke emitted from the copper company's stacks, or o- the Ducktown Company show like a haze in a photograph?

A. Yes, sir.

Q. 43. That is what is shown in this photograph?

A. Yes, sir, shown in most of them.

Q. 44. Where you testify about the haze?

A. Yes, sir.

Q. 45. No. 21, I believe you say you saw the stack of the Ducktown Company at the point from which you took the photograph?

A. No, sir, I did not.

Q. 46. State whether or not that white blurr to the right is smoke from their stack?

A. I couldn't tell positively, but I think it is.

Q. 47. You can then see it above the buildings, where you cannot see the stack?

A. Yes, sir.

Q. 48. Do you know from your own knowledge whether those are stacks here, (indicating). Did you count them?
A. Did I count them —I think there are six or seven.
Q. 49. Did they all emit smoke?
A. Yes, sir, most of them.

Recross-examination.

By Counsel for Defendant:

Q. 1. I wish you would look at No. 15, and state whether or not there are quite a number of trees which show up white in the foreground?
A. Yes, sir, there are.
Q. 2. Those leaves, I understand, are green?
A. They were green, nearly all of them.
Q. 3. Intermingled with the- are many leaves showing up dark?
A. Yes, sir.
Q. 4. They were also green?
A. Yes, sir, different variety, it seems.
Q. 5. Were there not many trees exactly the same color and some show up light and some dark?
A. Yes, sir.
491 Q. 6. Now, I wish you would look at that tree, which is near the foreground, (indicating) what kind of tree is that?
A. I think that is a hemlock.
Q. 7. That was green?
A. Yes, sir.
Q. 8. Some of those leaves are dark and some light?
A. Not of the same tree.
Q. 9. Look at the same tree and see if that is not true, look at the leaves on the left hand side in the light, and the right hand side dark?
A. Yes, sir, but that is not a hemlock, I find.
Q. 10. What is it?
A. That is a tree with broad leaves, I don't know what it is, I don't remember.
Q. 11. Now look at the left hand side of that photograph along up on the mountain side, some of the leaves look light and some look black?
A. Yes, sir.
Q. 12. All of those leaves were green, were they not?
A. I cannot say that, because there were some of those dead and dying they show that way.
Q. 13. Don't you know that some of those leaves back in there would show up light and were perfectly green?
A. No, sir, I do not.
Q. 14. Will you swear that the trees back in here that shows up light were dead?
A. No, sir, I will not swear as to them, because it is a broad leaf, shiny leaf, and that reflects the light at certain angles, whether in the back ground or foreground?

Q. 15. Now, when looking at the extreme right, that shows up lighter than on the left?

A. Yes, sir.

Q. 16. That is because there is more light on that side of the mountain?

A. No, not so much, but because the smoke between this ridge and that ridge, that ridge is some distance beyond this one.

Q. 17. Take No. 10, the whole back ground of that picture is light?

A. Yes, sir.

Q. 18. All those leaves over there were green?

A. Not all of them.

49? Q. 19. Ninety-nine one-hundredths of them were green?

A. No, you cannot make that comparison that high.

Q. 20. The great amount of them were green?

A. Yes, sir, a majority of them.

Q. 21. They all show light?

A. The whole thing shows light on a kind of hazy condition.

Q. 22. All that whole timber in that section shows light?

A. Yes, sir.

Q. 23. Then the conditons in the foreground, a great many of them shows light and a great many shows dark?

A. Yes, sir.

Q. 24. But all of them were green?

A. Nearly all of them.

Q. 25. Now, take No. 12 on the right hand side of this photograph, there are many leaves which show light and many of them show dark?

A. Yes, sir.

Q. 26. All of those leaves were green?

A. No, sir.

Q. 27. Don't you know as a matter of fact in that part of the photograph every one of those leaves were green?

A. No, sir, I don't know that.

Q. 28. You say that a great many leaves show light which were green?

A. Yes, sir.

Q. 29. Now, in regard to that smoke drifting up the valley there, do you know whether that is smoke or fog?

A. I couldn't tell you.

Q. 30. As a matter of fact, that smoke looks like fog?

A. When drifting that way.

Q. 31. You were speaksing about color photography, how long would it take to make a picture of a parrot the way you described it?

A. In that way I described?

Q. 32. Yes, sir.

A. It would take three or four times as long as by taming a photograph.

Q. 33. If you should scrape off each plate in the way you stated, it would take a whole day to take a photograph of a parrot?

A. Might- near a dau, matching it.

Q. 34. Then to go into a garden and take a garden with contains a number of flowers and show the colors of the flowers,
493 it would be almost impossible to match it?

A. It would be so near impossible that a man would have to work weeks and months to get a picture that way.

Q. 35. Then if there has been filed in this case, fifty or one hundred photographs showing the coloring of all the flowers and vegetables in gardens, that fellow must have worked a hundred years?

A. I suppose so, if he made it by photography.

Re-redirect examination.

By Counsel for Plaintiff:

Q. 1. Does or not the sun strike on all leaves at the same angle?

A. No.

Q. 2. Is that why some will show up light and some dark?

A. Yes, sir.

Q. 3. Will or not they show up to a greater extent in the foreground than in the distance?

A. Of course, anything near to you shows plainer to you than anything in the distance.

Q. 4. In photograph No. 10 where the whole mountain side in the back ground shows light, what is that due to, is it due to the reflection of light on the leaves?

A. No, sir.

Q. 5. What is it due to?

A. Smoke between the place where the photograph was made and the mountain.

Q. 6. Did you or not see the dead trees which the photograph discloses as being present?

A. I saw them.

Q. 7. Were they correctly shown?

A. Yes, sir as near as an instrument will make them.

Re-recross-examination.

By Counsel for Defendant:

Q. 1. You mean to say you have an independent recollection of the location of every tree which had dead leaves on it?

A. No, sir.

494 Q. 2. So then you are swearing about the location shown you are just guessing the trees which you have sworn to and appears in the photographs as the trees which you think you saw, that is what you are swearing to, is it not?

A. Yes, sir, as nearly as a correct photograph can be made, I couldn't locate the trees, I would not know where they were. I wouldn't know where each one was located, but it shows for itself in the photograph.

Q. 3. That is, you think it does?

A. I think it does.

Re-re-redirect examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. What do you base your opinion on? On your experience in photography?
A. Yes, sir.

Re-re-cross-examination

By COUNSEL FOR DEFENDANT:

Q. 1. Did you ever go and try to take photographs of dead trees before?
A. Not on so large a scale. I have made them before.

(This witness traveled 198 miles in coming to Blue Ridge and returning home.)

The next witness, ALBERT E. SHARPE, having been recalled by counsel for plaintiff, testified as follows:

Direct examination:

495 By COUNSEL FOR PLAINTIFF:

Q. 1. Were you with Mr. Adams, the gentleman who has just left the stand at the time he took these photographs?
A. Yes sir.
Q. 2. Are you familiar with this section of the country up here?
A. Reasonably so.
Q. 3. How long have you been living here?
A. I have been living down in the adjoining county all my life, forty seven years.
Q. 4. This photograph No. 1, can you state in what direction from the plant you were, what direction from the plant that was taken, and how far?
A. It was taken south——
Q. 5. Did you hear the statements made by Mr. Adams as to the distances and locations at which they were taken?
A. I heard his testimony and all he said about it.
Q. 6. Were or not those locations and statements correct?
A. I think they were.
By COUNSEL FOR DEFENDANT: You gave him the information?
A. No sir, I did not.
Q. 7. Did you state where each point was at the time he took the photographs?
A. Not all the time, I was with him part of the time, when some of the photographs were taken, Mr. Vestal taken the places more than I did.
Q. 8. But you heard his statements and you say they are correct?
A. Yes sir.

Cross-examination:

Stand aside.

(Thereupon the further taking of testimony is adjourned
496 until tomorrow morning, August 21st, 1914, at 8 o'clock A. M.)

The next witness, FRANK E. SHIPPEN, having first been duly sworn, deposed as follows:

Direct examination.

By Mr. HILL:

Q. 1. How old are you?
A. Forty seven years old.
Q. 2. Where do you live?
A. I live in Ellijay, Gilmer County, Georgia.
Q. 3. How long have you lived there?
A. I have lived there very near seventeen years.
Q. 4. What business are you engaged in?
A. The manufactur- of lumber.
Q. 5. How long have you been engaged in the lumber and timber business?
A. Since January 1889.
Q. 6. Have you been associated with your brother, W. H. Shippen?
A. Yes sir.
Q. 7. Are you connected with the Shippen Brothers Lumber Company?
A. Yes sir.
Q. 8. In what capacity?
A. Vice President.
Q. 9. That is a corporation, in which you are a stockholder?
A. Yes sir, incorporated under the laws of the State of Georgia.
Q. 10. In what other sections of the country have you been engaged in business?
A. We first started in January 1889 in Pennsylvania, we were there nearly six years. We manufactured lumber there. Then we cut out our holdings there and came to Louisville, Kentucky, and ran the lumber business and sawmill and planing mill there.
Q. 11. What induced you to come to Georgia?
A. Why, we didn't like the retail business very well there at Louisville, and thought there was a better opening, and my oldest brother came south and spent about six months here, and in
497 East Tennessee and Western North Carolina, and Gilmer and Fannin County, and Murray County, Georgia, and we located here, bought the property about nineteen years ago.
Q. 12. Did you yourself make an inspection of this country?
A. Yes sir, I did before we bought.
Q. 13. How did you regard it as a section for timber business?
A. I regarded it as a good section. We bought it during the

years of the panic, bought in January, the latter part of January and the 1st of February 1895. They had a very bad panic in Louisville.

Q. 14. You bought the lands then at a good price?

A. Yes sir, bought them at a bargain.

Q. 15. Was that before the Ducktown Copper Company and Tennessee Copper Company had enlarged their operations?

A. Why, I think the Ducktown smelter was running, but smaller operations at that time, than what they are running to-day. The Tennessee Copper Company was not in business.

Q. 16. What method did the Ducktown Copper Company use in roasting its ores?

A. They were roasting on the ground, open heap roasting, put wood under it and set it on fire and roasted the sulphur out.

Q. 17. What is known as the open heap method?

A. Yes sir.

Q. 18. To what extent was the country over in North Georgia affected by smoke at that time?

A. I saw no effect in North Georgia at that time.

Q. 19. Did you inspect the forests at that time with a view to purchasing?

A. Yes sir.

Q. 20. What is the condition of the forests in North Georgia now?

A. They are in a sickly and unhealthy condition, indeed. Dead and dying and condition in spots.

Q. 21. Compared with other forests which you have visited, what is their condition?

A. Well, it is a very badly damaged, dead and dying condition, the timber is damaged very badly.

Q. 22. Are you engaged in farming to any extent, do you have any crops at all?

A. Yes sir.

Q. 23. Have you inspected crops through this section of the country?

498 A. Yes sir. Not in Fannin County so much as I have in Gilmer County.

Q. 24. What is their condition?

A. Why, three years ago, I saw a bottom of corn in the river bottom there at Ellijay that I passed four times a day going from home to work and coming back, and that was injured, the greater part of it, the latter part of—I think it was the 30th day of September, or the first four or five days in October, the fodder and corn—replanting, the season was rather wet and we didn't get the corn in early, we didn't get the ground broken up until about the 1st of July and—until about the first of June and the corn was planted the first week in June, and the whole thing there was about a failure.

Q. 25. Have you or not seen smoke in that section?

A. Yes sir, I have seen it and smelled it. And made a record of this year. I have the record here.

Q. 26. Have you been around the Ducktown plant?

A. Yes sir.

Q. 27. State whether or not it is the same smoke in color and odor that comes from that section that you have seen and smelled there?

A. Yes sir, the same stuff.

Q. 28. Did you have occasion to examine the timber and crops shortly after the smoke came over?

A. Yes sir.

Q. 29. What would be the condition after such visitation?

A. The leaves would curl up and have brown spots on them and the corn blades, they will turn white and bleach out, and I have some samples here that I want to file of corn taken there from my own farm at Ellijay, that I passed four or five times a day.

Q. 30. What is the condition of the farms and timber and orchards this year?

A. It is in an unhealthy condition.

Q. 31. What were the conditions last year?

A. It has been in an unhealthy condition for five or six years.

Q. 32. I believe you say you have made a record of the dates this year that smoke has settled down on you?

A. Yes sir.

Q. 34. Give us those dates?

499 A. I might say that I live in Ellijay, within the corporate limits of the town, I live on a hill about two hundred and fifty feet higher than the town of Ellijay, and my front porch faces the north, and all of the Ellijay river valley and Flat Top Mountain and Bushy Head Mountain are in plain view of my house and front porch. By going two hundred and fifty feet to my brother's house I can look east and see all of the west end of Turniptown Mountain, and I can see the Arnold and Northcutt Mountains, where there are large peach and apple orchards. Now, on May 1st, the smoke was all over Turniptown Mountains, Flat Top Mountain and Bushy Head Mountain from 7:30 A. M. to 2:00 P. M., the air was out of the north.

On May 2nd, the smoke was all over Turniptown Mountain, Flat Top and Bushy Head Mountain from 7:00 A. M. to 3:00 P. M.

On May 8th, the smoke was all over the Ellijay River valley north of Ellijay and on Turniptown Mountain from 7.00 A. M. to 2:30 P. M.

On May 11th, the smoke was all over Turniptown Mountain Flat Top and Bushy Head Mountains from 6:30 A. M. to 4:00 P. M.

On May 13th, the smoke was all over the Ellijay River valley and Turniptown Mountain.

On May 14th the smoke was all over Flat Top and Bushy Head Mountains and Turniptown Mountains, the air was out of the north, from 6:30 A. M., to 12:30 P. M.

On May 16th, the smoke was all over Flat Top and Bushy Head Mountain and Turniptown Mountain.

On May 18th, the smoke was all over Flat Top and Bushy Head and Turniptown Mountains from 11:30 A. M. to 1:30 P. M.

On May 25th, smoke was all over Flat Top and Bushy head Mountain and Turniptown Mountain.

On May 26th, the smoke was all over Flat Top and Bushy Head and Turniptown Mountains.

On May 28th, the smoke was all over the Ellijay River valley and north of Ellijay and east from Turniptown Mountain.

500 On May 29th, the smoke was very strong in the Ellijay River valley and on the mountains north and east of Ellijay from 6:30 A. M. to 4:30 P. M.

On May 30th, the smoke was all over the Ellijay River valley strong, and on the mountains north and east of Ellijay.

On May 31st, the smoke was all over the Ellijay River Valley and the mountains north and east of Ellijay.

On June 1st, the smoke was all over the Ellijay River valley on the mountains north and east from 7:00 A. M. to 4:00 P. M.

On June 5th the smoke was all over the Ellijay River valley from 7:00 A. M. to 1:00 P. M.

On June 8th, the smoke was strong all over the Ellijay River valley, and Turniptown mountain from 7:30 A. M. to 4:30 P. M.

On June 9th the smoke was all over the Flat Top Mountains and Ellijay River valley and Turniptown Mountains from 6:30 A. M. to 12:00 P. M.

On June 10th, the smoke was strong all in the Ellijay River valley from 6:30 A. M. to 2:30 P. M., and all over Flat Top and Bushy Head and Turniptown Mountains.

On June 11th, the smoke was all over Turniptown Mountain, Flat Top Mountain and Bushy Head Mountain from 6 A. M. to 12 M. and all over the Ellijay River valley.

On June 12th, the smoke was strong and all over Flat Top and Bushy Head Mountains from 7:00 A. M. to 12:30 P. M.

On June 13th, the smoke was strong all over the Turniptown Mountain and Flat Top and Bushy Head Mountain and Ellijay River valley from 7:30 A. M. to 3:30 P. M.

One June 17th the smoke was all over the Turniptown and Flat Top and Bushy Head Mountain from 7 A. M. to 3 P. M.

One June 18th, the smoke was strong all over Turniptown and Flat Top and Bushy Head Mountains and Ellijay River valley from 7 A. M. to 11:30 A. M.

501 On June 20th, the smoke was all over the Flat Top and Bushy Head Mountain and Turniptown Mountain and Ellijay River Valley from 7 A. M. to 3:20 P. M.

On June 21st the smoke was strong all over the Ellijay River valley and Flat Top and Bushy Head Mountain from 7 A. M. to 6 P. M., smelled the smoke.

On June 22nd, the smoke was strong all over Flat Top, Bushy Head and Turniptown Mountains and remained from 6:30 A. M. to 7 P. M.

On July 3rd, the smoke was all over Flat Top, and Bushy Head and Turniptown Mountains from 7 A. M. to 4:30 P. M.

On July 5th, the smoke was all over Flat Top and Turniptown and Bushy Head Mountains, smoke strong.

On July 12th, the smoke was all over the Ellijay River Valley strong from 7 A. M. to 6:30 P. M. and over the Turniptown and Flat Top and Bushy Head Mountain.

On July 13th, the smoke was strong all over the Ellijay River Valley and the mountains north and east from 6:30 A. M. to 6:30 P. M.

On July 18th, the smoke was all over Flat Top and Bushy Head and Ellijay River valley.

On July 19th the smoke was all over Flat Top and Bushy Head and Turniptown Mountain.

On July 20th, the smoke was over the Flat Top and Bushy Head Mountains and Turniptown Mountain and Ellijay River valley.

On July 21st, the smoke was on Flat Top and Bushy Head and Turniptown Mountains.

On July 23rd, the smoke was all over Flat Top and Bushy Head and Turniptown Mountain from 6:30 A. M. to 1 P. M.

On July 24th the smoke was all over Flat Top and Bushy Head Mountains from 9:30 A. M. to 6:30 P. M.

On July 27th, the smoke was all over the Ellijay River valley and Flat Top and Turniptown Mountains all morning, I
502 went up to the Arnold Orchard in the afternoon. It was strong there on the mountains north and north west of there. I left the mountain at 5:15 P. M. and it was still smoky. I smelled the smoke three times on the mountain. Mr. Clarke, Mr. Sharp, W. H. Shippen and F. M. Shippen and Mr. Henson were in the party.

On July 28th the smoke was on Turniptown Mountain, Flat Top Mountain from 7 A. M. to 2 P. M.

On July 29th, the smoke was on Flat Top Mountain from 7 A. M. to 6:30 P. M. I went up to the Arnold Mountain and reached there about 2 P. M. and about 5:45 P. M. and the smoke was all over the mountains northwest of the Arnold Orchard.

On July 30th, the smoke was all over the Turniptown mountain and Flat Top Mountain and this Arnold Mountain from 6:30 A. M. to 6:30 P. M.

On July 31st, the smoke was over the Turniptown Mountain, Flat Top Mountain from 6 A. M. to 5 P. M. The smoke was strong.

On August 1st, the smokes was all over Turniptown and Flat Top Mountains from 6 A. M. to 6:20 P. M.; and from 1 P. M. to 6:20 P. M. the smoke was all over the Ellijay River valley.

On August 2nd, the smoke was on Turniptown and Flat Top Mountains from 7 A. M. to 4 P. M.

On August 3rd, the smoke was on Flat Top and Turniptown Mountains from 6:30 A. M. to 5 P. M.

On August 4th, on Barnes Mountain about nine miles southwest of the Ducktown Copper Company's plant, I could see their acid plant and tank, and at 3.25 P. M. could see the smoke rising up from their plant and going southeast reaching into Fannin County, Georgia, a larger volume of smoke than I saw from the Tennessee Copper Company's plant.

On August 5th, on Lots 91, 9th District and Second Section of

Fannin County, Georgia, at 2:45 P. M. I saw the plant of the Ducktown Copper Company, and a larger volume of smoke was coming from their plant and going southwest into Georgia.

On August 6th, from Lot 24, 9th District and Second Sec-
503 tion, on Granny Marr Mountain, I could see all north and east of the plant at Ducktown about six miles away at 9.30 A. M. The smoke was on Flat Top Mountain in Gilmer County, Georgia. I could see the Ducktown plant and their acid works, from between Lots 21 and 22, 9th District and Second Section on the road leading from John Pelfreys to the Burnt Mountain Storehouse, at 4 P. M. and 4:15 P. M. could see the Ducktown Company's acid plant from the Burnt Mountain Storehouse about three and one half miles away, southwest from there, and there was a larger volume of smoke going west against Big Frog Mountain and then into Georgia.

Q. 35. You say this smoke was a larger volume than what?

A. Than that coming from the Tennessee Copper Company's plant. On August 7th, I was on a hill near Hopewell Church house about 6:45 A. M. and the smoke was coming from the Ducktown Company's plant in larger volume than from the other plant and was going southeast into Georgia. I smelled the smoke on a little hill southeast of the Ducktown plant, was very strong. That is, I expect about a quarter of a mile away and it was going into Georgia southwest at 8.35 A. M. on the morning of August 7th.

On August 15th, on the train at 12:45 P. M. just north of Cherrylog, Georgia, the smoke was all over the mountains, especially over Big Ball and Little Ball and Cole Mountain and Flat Top and Turniptown Mountain. I noticed again at 5:45 P. M. the smoke was still north and east of Ellijay.

Q. 36. Was that last Saturday?

A. Yes sir, when leaving here.

Q. 37. When you were going from here back to Ellijay?

A. Yes sir. On August 16th, there was sulphur smoke all over the Flat Top and Bushy Head and Turniptown Mountain from 8 A. M.

Q. 38. Did you keep that record yourself?

A. Yes sir, I made it daily.

Q. 39. It was made from your own observation?

A. Yes sir.

Q. 40. Now, was that smoke or not similar in appearance and odor to the smoke you have noticed around the plants of the copper companies?

A. Yes sir. And while I was up there around the plant on the morning of the 7th, it made me cough, and it irritated my throat and hurt my eyes.

504 Q. 41. That was on the morning of the 7th of August?

A. Yes sir, and I might say further that when I saw that on the morning of August 7th, I got on top of a hill in Georgia and looked down and saw the smoke coming out, and I have seen it several mornings, and it is denser to me and there is more of that smoke in there in the morning than in the afternoon, in that valley,

and I cannot account for it any other way than they run their acid plants in the day time and let the smoke loose in the *daytime and let the smoke loose in the* night time.

By Counsel for Defendant: Do you know whether they do that or not?

A. That is my observation of it, I know it is always stronger in the morning at Ellijay than at any other time—I know that.

Q. 42. During the times you have mentioned from that memorandum there,——

A. I have seen it other times when it wasn't so dense and thick and strong, and then I have seen it other times at home there where I could smell it strong.

Q. 43. During the times you have mentioned, since the 1st of May, have you observed the forests and fields through there?

A. Yes sir, on our trees and crops.

Q. 44. Describe that?

A. After that smoke comes and settles in there, the leaves will be parched up and burned up and kind of curl up, will not look natural on the trees or limbs, and they will curl up and be burned and spots will come all through them.

Q. 45. Does that have any effect on the growth of the tree?

A. Yes sir. I have some samples that I have cut off of some oaks, white pine and poplar.

Q. 46. Does that have any effect on the market value of the timber?

A. Well, it decreases the growth materially and the timber does not increase in growth like it would otherwise, like it has
505 seven or eight years before, the last six or seven years the timber will show for itself, and years before that, it will show for itself.

Q. 47. Does it have effect on the forests generally?

A. Yes sir, the forests does not look to be in the condition it was twelve or thirteen years ago, or eighteen years ago, when we first looked this property over in North Georgia before we bought it.

Q. 48. Now, did you keep any record for last year?

A. No sir.

Q. 49. How was the condtion, as you recall it last year?

A. Last year we had a great deal of smoke, but our injury this year was earlier than I ever saw it before. There was serious injury there in June.

Q. 50. You say that it is earlier this year than you ever noticed it before?

A. Yes sir.

Q. 51. Than it has been up to the present time?

A. Yes sir. Generally, it has been in August and September, where I have noticed a great deal of injury.

Q. 52. As compared to last year, is the injury greater or less?

A. It is greater this year than last year.

Q. 53. The year before that, was it greater or less?

A. 1912 was bad year with us, a great deal,—I never saw corn affected down there as bad as I did in the year 1912.

Q. 54. You state you have some sections cut from trees?

A. Yes sir.

Q. 55. I will ask you to produce them and introduce them as Exhibits to your deposition? The section which I hand you now, describe that and introduce it as Exhibit No. 1 to your deposition?

A. That is a section of a spanish oak tree, it shows for the last several years the growth has been affected. In here it shows that it had a regular growth until it gets out to here (Indicating).

Q. 56. Did you cut that?

A. Yes sir, I had it cut.

Q. 57. And were you present?

A. Yes sir, and I file that as Exhibit No. 1 to my deposition.

Q. 58. I hand you section from a tree which I will ask you
506 to introduce as Exhibit No. 2 to your deposition?

A. Yes sir.

Q. 59. State what sort of tree that is?

A. That is a spanish oak.

Q. 60. You saw that cut?

A. Yes sir, you can look there and see what condition it is in, and you can look out there and see what it is doing now.

Q. 61. I hand you section from a tree and ask you to Exhibit as Exhibit No. 3, and state whether or not that was cut,——

A. That is a yellow poplar and was cut from logs on our yard which came from Lucas Switch, north of Cherrylog.

Q. 62. In Gilmer County?

A. Yes sir.

Q. 63. About how far from the plant of the Ducktown Copper Company?

A. Twelve or thirteen miles air line.

Q. 64. Did you see that cut?

A. Yes sir.

Q. 65. I hand you a section and ask you to Exhibit it as Exhibit No. 4 to your deposition?

A. Yes sir, this is a piece of white pine.

Q. 66. Did you see that cut?

A. Yes sir, that came from the same place.

Q. 67. I hand you another section and ask you to file it as Exhibit No. 5 to your deposition?

A. This is a black oak.

Q. 68. Did you see that cut?

A. Yes sir, this black oak and spanish oak and white pine timber is from the same place and is very susceptible to smelter fumes, some of the first timber that is killed.

Q. 69. Where did that come from? Just north of Cherrylog?

A. Yes sir, in Gilmer County, Georgia.

Q. 70. About the same distance from the plant?

A. Yes sir.

Q. 71. Did you see that cut?

A. Yes sir.

Q. 72. You were with Mr. Vestal and his son and Mr. Adams and Mr. Sharp when they took these pictures or photographs?

A. Yes sir, I left Ellijay on the night train of August 2nd and come to Blue Ridge.

Q. 73. Have you examined these photographs since they were taken?

A. I looked at them a few minutes at the hotel this afternoon.

Q. 74. Do they or not correctly portray the conditions as
507 you saw them at the time they were taken?

A. Yes sir.

Q. 75. Now, on this trip, did you or not notice the dead leaves?

A. Yes sir,—you mean from the effect of smoke, the down leaves on the trees?

Q. 76. Yes sir,

A. Yes sir.

Q. 77. Did you see any on the ground?

A. Yes sir, in places I saw leaves that come out in the Spring on the ground, falling from the trees.

Q. 78. Was the number of dead trees small or large?

A. Right large.

Q. 79. Is this the season of the year when leaves should fall?

A. I never saw them fall before the last seven or eight years in this way. We generally have frost in North Georgia from the month of October, anywhere from the month of October to the first week in November, that is frosts that will kill forest leaves.

Q. 80. You say that the number of leaves you saw were large—about how many, if you know?

A. Well, I saw them in various places, I saw quite a number on Barnes Mountain and on Granny Marr Mountain or Knob.

Q. 81. Now, on Barnes mountain, can you estimate,—Can you see the stack of the Ducktown Copper Company from there?

A. Well, from where I was, I was there two different days, I was there on,—Let's see,—(Looking at book) I think on the 4th and 5th of August, and I could see their acid plant, and see it setting up there, what I took to be the back end, and what I took to be their acid plant. Two buildings there, between where their smoke stack comes up, the brick building there. I never was in the plant, but back of the smoke stack there is a five or six story red brick building, then back of it, was what I took to be the acid plant. Now, this building was painted white, and I could see the water tank out there. I don't know whether I saw the smoke stack or not, I hardly think I did, from the point I was.

Q. 82. Was it from that point you observed the smoke?

A. I saw the smoke coming from the plant and going into Georgia.

Q. 83. You didn't see the stack?

A. I don't think so.

Q. 84. But you did see the smoke?

508 A. Yes sir, I saw the smoke coming up and could see the water tank.

Q. 85. Was it rising above the tank?

A. Yes sir, up in the air quite a way.

Q. 86. You noticed from Granny Marr Mountain and from other points?

A. I saw it from Granny Marr Mountain and I saw it on the road leading from Mr. John Pelfrey's, and saw it on,—I saw the plant from the Hopewell Church house, and from near the Burnt Store Church. I saw it from sever-l places.

Q. 87. On that trip to Barnes Mountain, did you examine the timber there?

A. Yes sir.

Q. 88. Did you notice the condition of it?

A. Yes sir.

Q. 89. To what extent was that damaged?

A. Why, the oak timber was the principal timber on that mountain, I would say that there was dead and damaged timber which I don't think will put out again, from looking at it, I would think something like forty per cent of the oak timber on that mountain will never put out again. I saw it there at Mr. Barnes' house and went up from there. I cannot tell you how long we were on that mountain, but I know what time the photographs were taken and then hour,—Let's see,—(Looking at Book) The first photograph was taken at 3:10 P. M. that is Photograph No. 6, the first on Barnes Mountain? No. 7 was taken at 3:40 P. M. and No. 8 and 4:20 P. M. and No. 9 at 5.20 P. M.

Q. 90. What was the appearance of the leaves on the trees there?

A. They were very brown, some of them were hanging on and a great many were on the ground.

Q. 91. Did they have the same appearance or not? that the leaves of the trees in Ellijay and around in Gilmer County had?

A. No sir. Not out of the smoke zone?

Q. 92. I mean in the smoke zone, in that section of the country?

A. Oh, well, there are places out there along the road about the Northcutt orchard where there is spots browned up, but not as badly as this up here.

509 Q. 93. This is worse here than there?

A. Yes sir.

Q. 94. State whether or not it is worse or 'ess as you go away from the plant?

A. As you go toward the plant it is worse and as you go away in some directions, it is generally better, but some places where it reaches out a long ways.

Q. 95. But as to the appearance of the individual leaf, do they appear the same?

A. Yes sir, the same on Barnes Mountain as down in my section.

Q. 96. Did you go over toward Jack River and in that section?

A. Yes sir, we did on August 6th.

Q. 97. What were the conditions there then?

A. Why, the conditions were very bad as to the white pine and hemlock timber there in places, we went across Barnes mountain

and went across the river and went down the river I guess a mile or a mile and a quarter.

Q. 98. Have you been on Tumblin Creek and in that section?

A. Yes sir.

Q. 99. Have you abe*r*ved conditions there?

A. Yes sir.

Q. 100. What were they there?

A. Well, we taken some views over there, several views, I have it down here, let's see,—Tumblin Creek,—Nos. 15, 16 and 17, three taken on Tumblin Creek.

Q. 101. Were the conditions good or bad?

A. The conditions were bad, the white pine and hemlock *y*imber, a great deal was dea-, and a great deal had just recently died. I examined the trees to see whether or not there had been any fire through any of the woods.

Q. 102. Have you examined the forests through this section to see if there is or not any disease of the trees or any,——

A. None that I know of, I never studied forestry.

Q. 103. But from your experience as a timber man?

A. From what I have noticed, I cannot see any cause the trees though die different from any country I have ever been in, that is they commence to die right in the top, the topmost branches and die back for a year, and the next year they come down a little
510 further on the tree, three or four years, and it fails to put out and they are dead.

Q. 104. Do you have or not any great forest fires in this section which burns up the timber?

A. No sir, but I have seen forest fires in Pennsylvania, thousands of acres burned over and have seen lives lost in our neighborhood. I didn't just see it, but was there after the forest fire went through. We had some forest fires on our lands in Pennsylvania that would burn the trees and kill them, some of the trees were burned down, where there was brush and stuff around them.

Q. 105. Do you have such fires here?

A. No sir.

Q. 106. Did you ever see one?

A. No sir. I have seen the leaves burn, run along on the ground. In Pennsylvania we had twenty five thousand feet of hemlock timber to the acre, and in cutting do*w*n the*n* timber we would have a great deal of limbs a*b*d tops and after it would lay there a year or so with the leaves and then let a fire go through it there was so much stuff to burn, but in this country, here, if we get six or seven thousand feet to the acre, we think we have got a good average from this hardwood timber. Where we had twenty five thousand feet to the acre there in Pennsylvania, and we do not have any fires here like we had there. Then we have more water courses here than in Pennsylvania.

Q. 107. What effect does water courses have?

A. It stops the fire, they can't cross, that is where the creeks are twenty to thirty feet wide, it has the effect of checking the fire.

Q. 108. When were the sections which you have tendered this afternoon and introduced as Exhibits when were they cut?

A. Do you mean when were those taken off the logs?

Q. 109. Yes sir, those five pieces, were they cut this year?

A. Yes sir, cut last Monday was a week ago.

Q. 110. I hand you a piece of wood and ask you to introduce it as Exhibit No. 6?

A. Yes sir, this is a piece of white pine timber I have had at the office for ten years, showing the growth.

511 Q. 111. Do you know where that was cut from?

A. Yes sir.

Q. 112. When was it?

A. Ten years ago, and this is a piece of white pine that shows eighteen inches of growth in nineteen years.

Q. 113. I hand you a piece of wood which I will ask you to introduce as Exhibit No. 7 and state what it is?

A. This is a piece of poplar that has been cut ten years.

Q. 114. Where was No. 6 cut from?

A. There at the band mill at Ellijay.

Q. 115. From about the same place as your first Exhibit was cut?

A. In that vicinity.

Q. 116. Where was this cut?

A. In the vicinity of Ellijay.

Q. 117. From the same locality?

A. Yes sir.

Q. 118. I hand you a small piece of wood which I will ask you to Exhibit as No. 8 to your deposition and state what it is?

A. Here is a small piece of spanish oak which has been cut, showing the growth.

Q. 119. Where was that cut?

A. At Ellijay.

Q. 120. I hand you three blades of corn, which I will ask you to Exhibit as Exhibit No. 9*m* to your testimony and state what that is?

A. This was cut off of the corn on June 26th of this year at Ellijay, that is out of my own garden. I saw the smoke in there two or three days before was cut, strong. I passed by it four times a day going from my house to the office.

Q. 121. What effect did you notice the smoke having on it?

A. I noticed the smoke in there and I noticed it all turning white.

Q. 122. How many days after you saw the smoke in there before you got these blades off?

A. I got them about three days after. Here is some corn on which it shows this down here,——

Q. 123. Was it in this condition when you cut it?

A. Yes sir, it has been dry and no water or dampness got to this to turn it white.

Q. 124. Now, coming back to the trip you made, were you on Granny Marr Mountain?

A. Yes sir.

512 Q. 125. What was the condition of the forests there?

A. On Thursday the 6th of August.

Q. 126. To what extent was the timber damaged there?

A. Why, on certain oaks, what we call spanish oak, some call it scarlet oak, and black oak, thirty five per cent of the timber was dead, badly damaged and dying. I saw no fire injury to this timber. We climbed up the mountain and went on near to the top and then we went down and to another top and then over it and went over in the Tumblin Creek Country, if I remember right, I have it down here, where those Photographs were taken, and I know the route we took. Yes, we went on Granny Marr Knob and crossed it and went on Tumblin Creek and went down Tumblin Creek quite a ways.

Q. 127. That was the trip you described this afternoon?

A. Yes sir, that was on Thursday the 6th of August.

Cross-examination.

By Mr. FOWLER:

Q. 1. Mr. Shippen, you are the Vice President of the Shippen Brothers Lumber Company?

A. Yes sir.

Q. 2. How long have you been connected with that company?

A. Ever since it was organized in 1903, Shippen Brothers first, and in June 1903 it was incorporated.

Q. 3. Have you been living in Gilmer County, Georgia ever since that time?

A. No sir, I went there seventeen years ago, and have been there ever since.

Q. 4. Before that, how did you happen to go there?

A. We looked over the timber, my oldest brother looked over the timber, and we sent a man from C. C. Mingle, Jr., & Brother, a cruiser, and then we had his report. He was down here some two months, and my brother Will and I came down and spent about three weeks and went over the land he gave us a report on and then we bought it.

513 Q. 5. When was that?

A. That cruiser was here in October and November of 1894.

Q. 6. Did you buy the land then?

A. Yes sir,—Not then, we bought in February following, in 1895.

Q. 7. And you have been buying lands ever since?

A. The Lumber Company has not bought any land I think,—1905 I think was the last, thirty thousand acres. We may have bought about four or five hundred acres during the last nine years.

Q. 8. Anyway, in 1905, you bought thirty thousand acres?

A. Yes sir.

Q. 9. No damage being done at that time?

A. Some, yes sir.

Q. 10. But, yet, you bought the land, thirty thousand acres at that time, where was it?

A. A great portion of it was in Gilmer County, some was in Fannin County and some was in Murray County.

Q. 11. That was just before the Tennessee Copper Company raised its high stack?

A. We bought this in May 1905, I don't know just when they raised their stack, I know there was a suit brought and then it was dismissed without prejudice.

Q. 12. I am not asking you about suits.

A. I am telling you what I know about it, I don't know just exactly when they raised their stack.

Q. 13. Anyway, no damage of consequence was being done when you bought that thirty thousand acres of land?

A. Not in Gilmer County, no sir. It hadn't reached that far down.

Q. 14. It didn't reach there until after the Tennessee Copper Company constructed the high stack?

A. I don't know when they constructed it, but as soon as they commenced to smelt the ores green and put it all in one body, then it commenced to damage us and come down in that country.

Q. 15. If you don't know when they constructed this high stack, how do you know what caused it to come down there?

A. They were making smoke up there, making more and more, each and every year.

Q. 16. You don't know then that it was the construction
514 of the high stack by the Tennessee Copper Company that caused the smoke to come down there?

A. It never come in there when they had the roast piles on top of the ground.

Q. 17. You bought that land in 1905?

A. In May, 1905.

Q. 18. You know that the smoke didn't come in there until at least 1906, you know that don't you?

A. I know a suit was started the latter part of 1905 or the early part of 1906.

Q. 19. Don't you know that the smoke — in there until at least 1906 or later?

A. No sir, I do not.

Q. 20. Well, you bought your land in 1905, and some time after that it commenced to come in there?

A. Yes sir, came into Gilmer County.

Q. 21. Now, Mr. Shippen, your company has 108,000 acres of land in North Georgia?

A. No sir, land and timber.

Q. 22. Part of that you own as timber rights?

A. Yes sir.

Q. 23. About 60,000 acres you own out-right?

A. In fee, yes sir.

Q. 24. Now, you and those connected with your company are really the parties who got up this lawsuit?

A. I don't think so.

Q. 25. You worked at it a great deal?

A. No sir, I spent very little time. I spent three and a half

days on the 6th, 4th and 5th, and one-half of the 7th, worked about two hours on the 7th day of August.

Q. 26. Well, when this suit was first started, you know you and your brother, W. H. Shippen were at least partly the institutors of it?

A. No sir, the people were complaining all around through the County. Complaining in Gordon County, in Pickens County and Dawson County.

Q. 27. You were complaining?

A. No sir, people were complaining and filing suits.

Q. 28. You were not complaining?

A. We were not stirring up any trouble or getting up any evidence.

Q. 29. Do you mean to swear that you did not claim that your company was being damaged—didn't have anything to do with getting up that lawsuit?

A. Who do you mean by your people?

515 Q. 30. You and W. H. Shippen?

A. We have a treasurer and several other officials.

Q. 31. Did you and W. H. Shippen have anything to do with getting up this lawsuit?

A. No sir, we took some affidavits some years ago in the original suits against both companies, decided in the Supreme Court six or seven years ago.

Q. 32. Anyway, your company has a suit against the Ducktown Copper Company?

A. Not for damages.

Q. 34. But you have a suit?

A. We want some relief. We didn't think the State of Georgia was going on, and we went ourselves.

Q. 35. You have a suit pending in the United States District Court at Knoxville, have you not?

A. Yes sir.

Q. 36. You are seeking to enjoin them from operating their plant?

A. From turning gases loose in Georgia, that suit has been brought about four years.

Q. 37. You have taken evidence in the case?

A. Yes sir.

Q. 38. And it has been submitted to the Court?

A. Yes sir, and held up for some unknown reason to us. We are asking for relief.

Q. 39. That suit has not been decided yet?

A. Not that I have heard of.

Q. 40. You have not filed any bill against the Tennessee Copper Company?

A. Not that I know of.

Q. 41. Don't you know?

A. No, not that I know of.

Q. 42. Don't you know whether you have or not?

A. I don't think we have.

Q. 43. Don't you know you have not?

A. Not of my own personal knowledge.

Q. 44. Don't you know that you have filed no bill against the Tennessee Copper Company?

A. I say I don't know whether we did or not.

Q. 45. Do you swear that you don't know whether you have filed any bill against the Tennessee Copper Company?

A. I don't know whether we have or not.

Q. 46. You know you compromised with the Tennessee Copper Company?

A. No, I know from hearsay evidence if you want that.

516 By Mr. HILL: We except to the question and answer because immaterial and irrelevant.

Q. 47. Who did you hear say so?

A. Well, I heard Mr. Miller talk about it as much at Chattanooga as anybody I ever heard.

Q. 48. Have you heard any official of your company say so?

A. No sir.

Q. 49. Did you ever hear W. H. Shippen say so?

A. No sir, I don't think I have.

Q. 50. Did you ever hear the Treasurer of your company say so? Who is the Treasurer?

A. Mr. H. J. Patten.

Q. 51. Where does he live?

A. In Philadelphia.

Q. 52. Did you ever hear him say so?

A. No sir, I don't think I have.

Q. 53. Did you ever hear any official of your company say so?

A. No sir.

Q. 54. Are you going to swear that you don't know that your company compromised with the Tennessee Copper Company?

A. I know something by hearsay, I don't personally, because I wasn't in New York, I wasn't there, and I don't know what took place. I signed a paper that says for $1.00 consideration, and which is on record here in your Courthouse.

Q. 55. What kind of paper was it?

By Mr. HILL: We except to that as the paper itself is the best evidence.

Overruled. Appeal prayed and granted.

A. I say it is on record here, it is on the records below.

Q. 56. What do you mean by below?

A. In Gilmer County.

Q. 57. Tell the nature of that document?

By Mr. HILL: We object to that as being immaterial and irrelevant, and on the further ground that the paper itself is the best evidence of its contents. And on the further ground that the agreement on its face purports to be merely part of the entire agreement and refers to another agreement as a part of it.

517 Q. 58. Now, go on and tell the nature of that document?

A. It has been some time,—been over six years ago if I re-

member right, I think it is an easement, that is my recollection of it. I never read it but once, and I was Secretary of the company at that time and my brother was President and we both had to sign it.

Q. 59. It was an easement for what?

A. Well, it was in payment of damages from smoke fumes to our lands by the Tennessee Copper Company.

Q. 60. And they paid you fifty thousand dollars?

A. I understood it was that, I never saw the money and never had anything to do with it, and wasn't present when the contract was made. I was in Georgia. If you want me to testify from hearsay evidence,——

Q. 61. For that fifty thousand dollars, your company released all rights against the Tennessee Copper Company?

A. I don't know whether it was to pay up to date, I don't remember, whether it was for future damages or not.

Q. 62. Mr. Shippen, if you didn't release them from future damages, why didn't you file a bill,——

A. I don't know,——

Q. 63. If you didn't release them from future damages, why didn't you file a bill against the Tennessee Copper Company?

A. I don't know, that would be up to the president.

Q. 64. You are the Vice President?

A. Yes sir.

Q. 65. And very much interested in the company?

A. Yes sir.

Q. 66. You are a stockholder?

A. Yes sir.

Q. 67. You are one of the operators of the plant?

A. Yes sir, a salaried man.

Q. 68. And your deposition was given in the Ducktown Company case, the case your company brought against the Ducktown Company?

A. Yes sir, it was given.

Q. 69. You took an interest in that?

A. Yes sir.

Q. 70. Now, why is it that your company has not brought suit against the Tennessee Copper Company?

A. I don't know, I don't know whether that was for future
518 damages or not, I just saw the paper and signed it and turned it over to Mr. Cornick.

Q. 71. You know the plant of the Tennessee Copper Company is much nearer?

A. Yes sir.

Q. 72. Nearer to your land too, is it not?

A. Well, we have no land right south, immediately south in Georgia. Have some on the Georgia and Tennessee line over southwest, and I believe it is as near to the Ducktown Company as to the Tennessee Copper Company.

Q. 73. Ellijay is nearer to the Tennessee Copper Company?

A. Some nearer, we just have a mill there, have not much timber land right around the mill there. It is in the mountains.

Q. 74. Is not the great body of your land down in Georgia nearer to the Tennessee Copper Company?

A. Some is, and some nearer to the Ducktown Copper Company.

Q. 75. I wish you would name what single locality is nearer to the Ducktown plant?

A. That is, I think it is. (Looking at paper) I think Lots Nos. 19, and 27th District and Second Section, in Fannin County, Georgia, and I think,—Well, several lots right in here, all this dark red (Indicating on map) is the thirty thousand acres we bought in 1905. Here is some in Gilmer County and here is some in Ellijay—Here is the railroad—here is Blue Ridge.

Q. 76. Where are the two furnaces?

A. The Tennessee Copper Company is over here (Indicating) right over the Georgia line, in No. 4 I understand, in the 8th District & Second Section, and this other one is on Potato Creek, and Potato Creek comes down into the Ocoee River below the Tennessee Copper Company's plant.

Q. 77. Don't you know that the Ducktown Copper Company is almost directly north of the Tennessee Copper Company?

A. I don't know, I have been up there maybe two times, it is some north, but I think it is a little west.

Q. 78. As a matter of fact, is it not almost directly north; as a matter of fact is not Isabella somewhat east of north, looking at the Government map?

519 A. Yes sir, just a little I think, just a little ways, just a little east.

Q. 79. So it is, that all of your lands lie nearer to the Tennessee Copper Company's plant than to the Ducktown Company's plant?

A. Some is about the same in the 27th District and 2nd Section.

Q. 80. One little section you think, is about the same?

A. Several thousand acres in that boundary.

Q. 81. As a matter of fact as you measure it, don't it show to be near Copperhill?

A. A little bit nearer, but not much.

Q. 82. You also know that the Tennessee Copper Company's plant is a very much larger plant that that of the Ducktown Company?

A. I don't know, I was in the Tennessee Copper Company's plant about twelve years ago for about two hours. I have never been in the other plant, I never was in the Ducktown Company's plant, but have been close to it.

Q. 83. Anyway, it presents the appearance of having a much greater capacity?

A. It looks bigger, has a bigger stack, and has a much bigger acid plant, according to my ideas.

Q. 84. You don't know anything about the furnace plant?

A. No sir.

Q. 85. So you don't know anything about the relative capacity of the plant in controversy, or the amount of copper smelted by either of the companies?

A. No sir.

Q. 86. Now, you purchased that land you say,—thirty thousand acres, in 1905, what did you pay for it?

A. We paid for it in stock in the company, $120,000.

Q. 87. That would be how much per acre?

A. $4.00 an acre.

Q. 88. What is it worth now?

A. It is worth more money now than then.

Q. 89. How much more?

A. Well, I don't know. I saw some land that the Government gave $7.50 per acre, and our land is closer to the railroad and has good deal more timber on it.

Q. 90. How much is it worth now an acre on an average?

520 A. Some land there in Fannin County that lies right around our land, thirty thousand acres sold for thirty thousand dollars, and they borrowed from a trust company in Detroit Michigan, they borrowed four hundred and fifty thousand dollars on it, or $15.00 an acre.

Q. 91. I asked you what was the value of your land, what your land is worth per acre—You paid four dollars an acre?

A. It is worth $15.00 per acre.

Q. 92. So, those lands have increased in value nearly four times since 1905?

A. Yes sir.

Q. 93. What did you pay for your other lands that you bought in 1904?

A. 1895,—in the early part of the year.

Q. 94. What did you pay for those lands?

A. During the panic I think we paid $65,000 for 40,000 acres, *and* 20,000 acre timber deed and 20,000 acres in fee land, and the plant there, an old plant there, we paid $65,000.00 for.

Q. 95. What is that worth now?

A. Well, the plant burned up about four years ago, and we put in an up to date plant, the plant cost about $60,000 that we put in there.

Q. 96. Let's leave out the plant, what is the land worth?

A. The land in fee, we consider it worth about twelve to fifteen dollars an acre.

Q. 97. What is the other worth?

A. The timber deeds?

Q. 98. Yes sir.

A. About six or seven dollars an acre, about half.

Q. 99. Then that has increased in value about six or eight times since 1895?

A. Yes sir, it has increased, we thought it was a bargain when we bought it, we thought we had made our money when we bought it.

Q. 100. In addition to that, you have cut how much timber from those lands?

A. All together we have cut, I suppose, two or three thousand acres, that has been cut about ten years ago. There has been some trespassing on some of the land that we bought nine years ago, be-

fore we bought the land there had been some cut on it, but we never,——

521 Q. 101. How much land have you cut over, how many thousand feet have you cut?

A. I have not got that down in figures, but we cut about—we just took the big nature white pine and poplar.

Q. 102. How much did you cut?

A. Something like thirty five feet to the acre, we didn't cut it clean, didn't cut it like we would if we had been going to cut it out. That was ten years ago when lumber was cheap. Good lumber was not worth what it is to-day, lumber culls were hard stock, not worth much ten years ago, as compared with what it is to-day.

Q. 103. I asked you how much lumber you cut from your land?

A. About three to four thousand feet per acre.

Q. 104. How much did you cut all together?

A. About eight hundred thousand feet, that is, off of our own land.

Q. 105. Now, you say that the forests are sickly in North Georgia?

A. Yes sir, and in an unhealthy condition.

Q. 106. You say there is some timber dead?

A. Yes sir, great quantities of it in places, and dying.

Q. 107. You say that it is in a worse condition than elsewhere?

A. Yes sir, than in any timber country, in Kentucky or Pennsylvania, worse condition than it was twelve years ago.

Q. 108. Have you traveled over the Cumberland Mountains in East Tennessee?

A. No sir. I have been in Kentucky in Larue County, and have been through a good deal of the timber, and in Marion County.

Q. 109. When were you there?

A. About nineteen years ago.

Q. 110. You don't know how the forests are there now?

A. Not to-day, no sir, I don't know what they are in Pennsylvania.

Q. 111. Don't you know it to be a fact that the chestnut is dying all through the Allegheny Mountains?

A. No sir.

Q. 112. F*ra* away from here?

A. No sir, it has been twenty one years since I left Pennsylvania.

Q. 113. Don't you know it to be a fact that the hickories an- white pine are dying elsewhere in this locality?

522 A. No sir, not at any rate like it is here.

Q. 114. Do you know whether they are or are not?

A. No sir, but I read the lumber papers, though.

Q. 115. Do you or not know it to be a fact that practically all of the chestnut is dead in the Cumberland Mountains?

A. No sir.

Q. 116. And that great stretches of hemlock and white pine are dead in the Cumberland Mountains?

A. No sir, I don't know much about the white pine in the Cumberland Mountains. There is some in Western North Carolina and some in East Tennessee and some *on* North Georgia.

Q. 117. I am talking about the Cumberland Mountains in East Tennessee?

A. I don't know. I see by the lumber papers that the people handle and manufacture white pine, I see their advertisements and have seen and talked with some of them,——

Q. 116. I am not asking what they said. You have not been there, and you do not know anything about it.

A. No sir, but,——

Q. 119. Then as a matter of fact you have not visited any other forest- to compare them with these parts?

A. Not since I have been in North Georgia.

Q. 120. That has been nineteen or twenty years ago?

A. It has been seventeen years.

Q. 121. Do you know anything about the forests and know that diseases do attack forests?

A. Well, I suppose when something comes along and kills the tree and kills the foliage, that a part of them will be attacked by insects and fungous diseases, I know that much.

Q. 122. Do you know anything about the diseases of forests and know that where there is no smoke, nothing to attack the leaves, that diseases do attack the trees?

A. Yes sir, I suppose they do, once in a while, but not forty or fifty per cent of certain timber.

Q. 123. Now, don't argue, just answer my question. Do you know that diseases attack chestnut trees and kill practically
523 all of them when there is no smoke at all?

A. I have seen in the lumber papers that in Long Island and some of the Eastern States, about Pennsylvania, I have read recently they had the chestnut blight, that it has been there, but I never have seen where it has gone into the forests of North Carolina, or North Georgia.

Q. 124. That is just your opinion?

A. I have read after Mr. Henry Solon Graves, I have read several articles of his.

Q. 125. Do you really think he knows all about the timber in the United States?

A. I think he is a very good authority on forestry.

Q. 126. Because Henry Solon Graves has not yet stated there was a fung-us disease which has affected the chestnut in North Georgia, you don't believe it, is that so?

A. Not from what I know about it. I have been out in the woods, I was out in the woods last fall gathering chestnuts on Flat Top Mountain, out there two days gathering chestnuts.

Q. 127. You still have nice chestnuts up there?

A. Yes sir, in places.

Q. 128. Don't you know that hemlock and white pine are both trees that are especially subject to diseases?

A. Not in Pennsylvania where I was, and not here in North Georgia until the last six or seven years.

Q. 129. Do you know whether they are some where else?

A. No sir, I don't know.

Q. 130. Forest fires kill a good many trees, too, don't they?

A. I have seen forest fires in Pennsylvania,—well, people were burned up. The laps and big limbs and one thing and another along the logging roads. I have seen big timber burning, have seen it burn when the forests were green, but I have never seen anything like that in the south.

Q. 131. You have cut a good deal of timber, six or eight hundred thousand feet from this land?

A. Yes sir, off our own land. We have manufactured through our planing mill and saw mill about six million feet for about seventeen years, from North Georgia, white pine and poplar.

Q. 132. Then I take it that this part of the forests of North Georgia have been cut over?

524 A. Well, we have cut logs, and gotten logs from Bolten, right near Atlanta, Georgia, from Murphy, North Carolina, and from Farner, Tennessee, and from Canton, Georgia, and we have gotten logs from Unionetta, Georgia. We get logs from as far as Farner, and Murphy, North Carolina, and some above there on the Southern Railway.

Q. 133. Anyway, a very considerable part of the forests of North Georgia have been cut over?

A. Near to the railroad.

Q. 134. A good part of Mr. Vestal's land has been cut over?

A. I saw some he told me was his land, only had a map there, I have looked it over, and I saw on Tumblin Creek, there had been some cut over. He showed me some lands along there, and some of his lands I judge was cut over about ten years ago. Some poplar there, and considerable white pine, a great quantity of it dead, and the hemlock is dead, I am sorry to say.

Q. 135. Is it not a fact that the cutting of trees in the forests and leaving the laps lying among the other trees creates diseases which are imparted to those healthy trees?

A. I have not studied forestry, I don't know, it might cause it now and then, but if you happen in where there are three or four hundred trees that are dead, it is not from the cause you speak of.

Q. 136. Is it not a further fact that when they are left lying in the woods, they feed the flames that may break out and go through the woods?

A. When a fire — in the woods, it shows on the bark of the trees, burned,——

Q. 137. Will you answer my question?

(Stenographer repeats question.)

A. Yes sir, if it is very dry timber, and the stuff is dry around there it will burn if you set a match to it.

Q. 138. Now, I believe you state that the forests of North Georgia have been in an unhealthy condition for five or six years?

A. Yes sir. They don't look like other forests, the twigs and limbs,——

Q. 140. You mean to say that more than five or six years ago they were in good condition?

A. They were better ten years ago.

525 Q. 141. You said for five or six years they had been in an unhealthy condition?

A. Yes sir, in Gilmer County.

Q. 142. Just five or six years?

A. Yes sir, in Gilmer County.

Q. 143. Then they were not in an unhealthy condition in 1908 and 1909, is that correct?

A. Yes sir.

Q. 144. They got in an unhealthy condition about the time the acid plants went up?

A. I don't know when the acid plants went up.

Q. 145. Do you know from your understanding?

A. No sir.

Q. 146. You have been in Copperhill furnaces, around the plant?

A. I was at Copperhill at the Tennessee Copper Company's plant about twelve years ago, *twelve years ago*, just before my father died.

Q. 147. When were you last in Ducktown or Copperhill?

A. On the 7th day of August I was at the Station, I wasn't in the works of either concern, I was right up around the plants.

Q. 148. Was that the time you got choked?

A. Yes sir, the time it hurt my eyes and my nose and throat and made me cough. I think you would have coughed too, if you were in it?

Q. 149. Did you see anybody else coughing?

A. Yes sir.

Q. 150. Who else?

A. Mr. Sharpe.

Q. 151. Did you see him or did he tell you?

A. Mr. Sharpe and Mr. Adams and Mr. Vestal and myself were on that trip,——

Q. 152. Did you see Mr. Vestal coughing?

A. I saw two besides myself.

Q. 153. Did you all cough by consent?

A. No sir.

Q. 154. You didn't have any understanding that you were all going to cough when you went there?

A. No sir.

Q. 155. When were you up there before that time?

A. I was never in their plant. I was along there at the Ducktown Station about four years ago.

Q. 156. Did you cough then?

A. Yes sir, and smelled the smoke there then, and I coughed.

Q. 157. So it is, that every time you go through Ducktown you cough?

526 A. No sir, not every time, the railroad station, there at Ducktown Station—I have been through there a good many times.

Q. 158. It don't make you cough when you go around the Tennessee Copper Company's plant?

A. I never smelled the stuff there. I smelled it over at your

plant, I was down at the railroad and I wasn't up on the hill where those three or four nice little houses, I suppose the Manager's and Superintendent's houses are. I was down at the railroad on the road. I wasn't up around near their works. I was up above your works on a little hill just toward the Georgia line, a little hill that is a little bit higher than the acid plant and smelter, that I was talking about.

Q. 159. You were right up there, so you could look over in the stack?

A. No sir, I was back from the acid plant about a quarter of a mile away, I take it to be something near that.

Q. 160. Now, you have told a great many dates here, when you say things happened. You must have been running a kind of weather bureau down there, were you not?

A. Yes sir, I sat on the front porch a few minutes at dinner time, and a few minutes waiting for breakfast, and then the days are long, they are commencing to get shorter now, I would set out there at night until supper was ready, and sometimes I would go out after supper, because it was cooler than in the house.

Q. 161. The days were not getting longer in May?

A. Yes sir, they started getting longer the 22nd day of March.

Q. 162. They were not getting longer in July?

A. No sir, getting shorter.

Q. 163. They were not getting longer in August?

A. They are still long days, longer daylight than dark.

Q. 164. You must have stayed there all the time?

A. Sundays I did, pretty near all day.

Q. 165. You have given us hours from five o'clock in the morning until noon and then all through the afternoon?

A. Yes sir.

Q. 166. Do you mean you did nothing but sit there?

A. No sir, I had something else to do.

Q. 167. Were you sitting there on the front porch at all
527 the hours you have mentioned?

A. No sir, not all the hours I mention, you can see from the back of our store and the lumber yards, see up the Ellijay River valley, up near the Grist mill you can see Turniptown Mountain to the east, and on the lumber yards you can see the Ellijay River Valley and Flat Top and Bushy Head Gaps.

Q. 168. I say, you spent most of your time out there gazing at the tops of the mountains?

A. No sir, I would go home for dinner and then come back to the office and then go back to the house.

Q. 169. Everything you looked up toward turniptown Mountain, you saw a haze, you would jerk out your little book and put down that you had seen smoke?

A. No sir, there have been several days I was satisfied smoke was there, but not so much of it.

Q. 170. Didn't you put that down?

A. No sir.

Q. 171. Why didn't you record it every time, why did you put it down some days and not others?

A. I put it down when the smoke was strong, and no question of what it was.

Q. 172. You put it down every time it made you cough?

A. I put it down when I was up in Tennessee, I didn't testify it made me cough down there.

Q. 173. I notice sometimes in your book you say the smoke was strong and you say you smelt it, and sometimes you wouldn't say anything about smelling it, did you note it every time you smelled it?

A. No sir.

Q. 174. You mean to say you smelled it when you didn't put it down on that book?

A. Yes sir, I smelled it several times, I smelled it last year and the year before, I never kept any record of it.

Q. 175. As you were keeping a record and made notes that sometimes you smelled it, why didn't you note it every time you smelled it?

A. (No answer).

Q. 176. Why did you put down one time that you smelled the smoke and not other times?

A. I have in this record that I smelled it on Arnold Mountain, and around your works and in Gilmer County several times, I said so in there.

528 Q. 177. Well you say sometimes you smelled it?

A. Yes sir.

Q. 178. Then every time you smelled it, you made a note of it in your book?

A. Yes sir, I think so, I may have skipped one or two times, but I meant to make a note of it at the time.

Q. 179. Any way, every day this year you have looked at the top of Turniptown Mountain and saw that smoke?

A. I live two hundred feet higher than the town. And in going two hundred and fifty feet to my brother's house I can see the west end of Turniptown Mountain, Arnold Mountain and Northcutt's Orchard up there.

Q. 180. I am not questioning but that you can see Turniptown Mountain, but you don't know where that smoke comes from—that is a guess?

A. It is just like I have seen on the hill right in Georgia, at the Georgia and Tennessee line, and like I have seen right there in the Ducktown Basin right around the works, the same stuff that I saw coming out of the stack and the wind carrying it right into Georgia where we were. I smelled it there and down here, and I know what sulphur is when I smell it. Up until I was twelve years old we used sulphur matches.

Q. 181. As I understand from your book you didn't smell it but a few times?

A. Down in Gilmer County.

Q. 182. I am asking you about those times you have it noted,

when it was in there, when you didn't smell it, and those times you didn't know where it came from.

A. I didn't know when it was there, but the wind was coming from the north, and when the air is coming out of the north I seen it coming out of the north, and you are making that smoke and putting it out in the air, and it will come down there.

Q. 183. Now, there are from twelve to twenty stacks in the Ducktown Basin which emit smoke, is that true?

A. Why, several there, from the shaft houses where the mines are opened, but some of them are right near the ground, some places they are running there, and was burning coal, it looked to me like coal smoke, but I know the difference between coal smoke——

529 Q. 184. Now, you are talking a great deal more than I asked you about, I asked you if there were not twelve to twenty stacks in the Ducktown Basin emitting smoke?

A. I think there is more than that, I don't know whether they all emit smoke all the time or not.

Q. 185. Tell how many there are?

A. I don't know, but I suppose I saw——

Q. 186. How many did you see?

A. Well, above the Ducktown Copper Company's plant, I wouldn't be sure whether it was just east or west of it, it looked like five or six iron stacks, looked like there might be a pumping station or power house, I didn't go in it.

Q. 187. Then there were five or six there?

A. Yes sir, and two or three stacks, some small ones on top of the Ducktown Sulphur, Copper & Iron Company's plant, and one big one, a large one with a great volume of smoke coming out.

Q. 188. You say this was a large stack?

A. Yes sir, larger than the power house stack.

Q. 189. So taking the Ducktown Basin as a whole, there is a large amount of smoke emitted there from these various stacks?

A. Yes sir, both coal and copper smoke.

Q. 190. Then when those various stacks send out the smoke they gradually become mixed among each other?

A. Well, I have seen—From what I saw over there on Barnes Mountain and Granny Marr Mountain, on the Hotel Church House road, and the Burnt Store Church House, and on the road leading over to Mr. Pelfry's and over to the Burnt Store Church House, we could only see—occasionally we would see smoke coming from—it looked like coal smoke we thought, from those hoisting engines at the mines, most of it was sulphur smoke, big volume of it, we saw that coming together and mixing, and some days it was going to Frog Mountain and then coming down into Georgia.

Q. 191. Wouldn't that smoke rise very high and does it not get above the coal smoke—is the smoke sent out of the Ten-

530 nessee Copper Company's stack—does that not go very much higher?

A. No sir.

Q. 192. You know it is higher, don't you?

A. I didn't take the altitude up there from where it is. I am positive it is a higher stack from the ground to the top, but I don't know how much higher it is.

Q. 193. Don't you know it is 180 feet higher in altitude than the Ducktown Company's stack?

A. It may be, I cannot tell.

Q. 194. That causes the smoke to be sent out that much higher in altitude.

—. ——.

Q. 195. You know furthermore that the stack of the Ducktown Company don't go above the top of the building?

A. Yes sir.

Q. 196. You swear that it does?

A. Yes sir.

Q. 197. Then if the photographs on file by the State of Georgia shows to the contrary, the photographs are false, is that true?

A. At the time the photographs were taken, I saw several times when the photographs were being made, we was from over there two and one half hours around Ducktown.

Q. 198. Were you along with Mr. Adams?

A. Yes sir.

Q. 199. You saw him take the photographs?

A. Yes sir.

Q. 200. Were they correct?

A. Yes sir, I suppose they were, I saw the photographs to-day and they looked like they did through the camera, but as to the dead timber——

Q. 201. I am not asking you about that, I am asking about the photographs. The photographs around the furnaces are correct, are they not?

A. To the best of my knowledge. But those in the woods don't show——

Q. 202. I am not asking about the photographs in the woods. Now those stacks standing near there, five or six stacks you have mentioned, are they not as high as the furnace stack?

A. I don't think so.

Q. 203. They were higher——

A. They are a lower building, and I looked—I didn't look at them to see, they are smaller in size, two or three of them—my recollection is, higher than the others.

Q. 204. Don't you know that the smoke emitted from
531 them will be at about the same altitude as the smoke emitted from the furnaces?

A. I don't think so.

Q. 205. Is that so as to the various mines?

A. Some of them are on hills, yes sir.

Q. 206. Any way, when you are in Ellijay, Georgia, of course, you are not in view of those furnaces?

A. No sir, you cannot see them.

Q. 207. You see the smoke on the hills and as a matter of fact, it is very hazy and you see that and put it down as smoke?

A. When it is a little hazy I didn't put it down, but when there was a large volume of it on those mountains.

Q. 208. What do you mean by a large volume?

A. I mean it looked in places, at times, it looked like a fog, sometimes it was stronger than others——

Q. 209. There was——

A. —last Saturday when I went down on the train it was in that territory strong, after we got down here four miles south of Blue Ridge, I think at 12:45, all the way down, especially at Cherrylog, where we could see small mountains, it was wrapped up in smoke, and at Ellijay the mountains were all——

Q. 210. You have seen fog in those mountains?

A. Yes sir, when the fog comes out and brings the sunshine, the fog goes away, and the smoke don't, it hangs in there.

Q. 211. Don't you know the color of this smoke and fog is almost identical?

A. Yes sir, almost alike in color.

Q. 212. Before that high stack was ever erected, and before any smoke was ever in that country, you saw hundreds and hundreds of fogs?

A. Yes sir, I have seen them.

Q. 213. And they looked like this smoke?

A. Yes sir, but they don't smell like it.

Q. 214. Of course, I am not talking about the times you smelled it?

A. I never saw fog that would injure trees and fodder and beans and potatoes, or anything like that.

Q. 215. But everytime you saw fog and smoke on Turnip-
532 town Mountain, did you go up and examine to see if there was any injury?

A. No sir, but I did go by my garden. I raised all the stuff I eat, and I saw the effects on the garden; saw stuff damaged in the garden.

Q. 216. That is, just a time or two, a few times?

A. No sir.

Q. 217. I am talking about the smoke you saw on Turniptown Mountain?

A. Some days it would be up there, I saw it and smelled it, I saw it before I went up there, and I went up there in it.

Q. 218. Everytime?

A. No sir, I said sometimes, if you would listen, I said sometimes.

Q. 219. Sometimes it might have been fog, and not smoke at all?

A. I don't think so, it was in a period when there was no rain, I saw it in May, June and July.

Q. 220. Was there any of these days you have recorded there bright days?

A. Yes sir, I couldn't give the days—It might have rained some during some of these days, but I—If it rained in the afternoon I stopped it at dinnertime, if we had showers in the afternoon, I cut it off when I saw the smoke.

Q. 221. Did you cut it off whether the smoke went out or not?

A. I could see it was——

Q. 222. Don't you know that everytime you saw fog up there you noted it down as smoke?

A. No sir.

Q. 223. You never saw fog on any other occasions except those times you have noted?

A. I have seen fogs there, I never made no note of it, I have seen them go off, and this stuff hangs in there, goes down on the plant life, and when the wind blows it goes further on down and fog rises up when the sun comes out and disappears.

Q. 224. It don't disappear immediately?

A. In an hour or two it will move off, move out, and the smoke don't do that way.

Q. 225. Have you studied atmospheric conditions of all kinds?

A. No sir, I don't know as I have.

Q. 226. Have you studied fogs?

533 A. No sir, I don't know as I have.

Q. 227. Have you studied the conditions that govern fogs?

A. No sir, I have not studied it.

Q. 228. Don't you know the fogs in the mountains here are just as common as on the ocean?

A. I don't know, I have never been on the oceans much, I have been two trips from Savannah to New York.

Q. 229. Do you know why it is this mountain is called Smoky Mountain?

A. These in North Carolina?

Q. 230. Do you know why they are known as Smokey Mountains?

A. I don't think so.

Q. 231. Don't you know that this whole range of mountains in the Smokey Mountains?

A. No sir, I don't know anything about them, it is the Blue Ridge Mountains from Pennsylvania down through Virginia and North Carolina and over into Alabama.

Q. 232. You know that a great part of this mountain, at least the mountains through here are called the Great Smokey Mountains?

A. I have heard so, have seen it on the map.

Q. 223. You know why it was called that?

A. No sir.

Q. 234. Don't you know it is because of the presence for a good part of the year a smokey appearance?

A. I couldn't say that, I never was in the Smokey Mountains, it may be that I have crossed through them in the night-ime in traveling on trains, I have never been off the train in the Smokey Mountain Country.

Q. 235*p*. Do you know why this is called the Blue Ridge?

A. I don't know that I do.

Q. 236. Is it not because that from a distance it gives the appear-

ance of a blue smoke, and has done that from the early history of this country, and that is the reason it is called Blue Ridge?

A. I have seen this Blue Ridge Mountain in Virginia, also at Charlottesville and in through there, and nothing like there what I see on the mountains here.

534 Q. 237. Of course, you see smoke sometimes, and see fog sometimes, now, I am talking about the color of it, is it not a fact that when standing some distance from these mountains you see it has an appearance of a blue haze around the mountains?

A. Some days when the air is right way and when there wasn't any smoke in there, I can set on my front porch nine miles away from Flat Top Mountain, I live on Lot 84 11th District and 7th Section, nine miles according to the map, maybe nine and a half, I can see the timber, I can see the outlines.

Q. 238. That is some days, but are there not other days you cannot see at all, when there is not a sign of smoke on account of the blue atmosphere?

A. If a rain comes up, I can set on my front porch and not see the town of Ellijay because it is wrapped up in Ducktown smoke.

Q. 239. I am not talking about that. I want to know when there is no smoke in that vicinity anywhere, on some days, clear days, you cannot see the outline of those mountains because of the blue haze?

A. No sir, not when it is a clear day, I can see them.

Q. 240. Have you not seen many days when there was blue haze around those mountains when you knew the wind was out of the north?

A. No sir, not from my front porch, nine miles away.

Q. 241. Then you cannot tell why it was these mountains were called the Blue Ridge Mountains one hundred years ago?

A. I don't know why.

Q. 242. They are called that?

A. I don't know why.

Q. 243. You say this whole range is called that, all these mountains?

A. Yes sir——

Q. 244. Called the Great Smokey before they were inhabited by white people or when they first came here?

A. I suppose they were.

Q. 245. Now, you have one surmise, you said that you couldn't tell why it was that smoke was in there early in the morning unless they didn't operate their plant at night, you don't know anything about that?

A. I have heard——

535 Q. 246. I am not asking you what you have heard.

A. You asked me what I had heard about some other things, about the compromise that was made.

Q. 247. Do you know anything about when they operate their acid plant?

A. I can only say that I have seen in the morning when the

smoke was close to the plant, there was more smoke early in the morning than during any time in the day, and there is more smoke in Gilmer County early in the morning than up in the day.

Q. 248. Now, you have not answered my question. Do you know whether they operate the acid plant at night or not?

A. No sir, I don't, but I have heard——

Q. 249. I didn't ask you what you have heard. I am asking you now, I believe, you testified, Mr. Shippen, that when Mr. Adams was taking these photographs, you saw dead leaves on the trees?

A. Yes sir, I saw lots of them, that don't show up in those photographs.

Q. 250. Then the photographs are not correct?

A. Some of them don't show the conditions in there.

Q. 251. Then you swear positively his photographs are not correct?

A. I don't know how you want to put it, but if the trees are dead and the bark is off, they show in the photographs, but on some of the trees the leaves are entirely dead or was in a dying condition.

Q. 252. What color were those leaves?

A. Some of them were darker than others, I think some brown injury, but they don't turn brown all over, part of them were brown.

Q. 253. Partly brown and partly not?

A. Yes sir, they turned, some of them, turned practically red.

Q. 254. Some of them were practically red and some were brown?

A. Some of them were darker than others, I think some brown and some with brown spots on them.

Q. 255. Those that were brown in spots, was the remainder of them red?

A. No sir, a kind of pale green, looked sickly, and curled up and in an unhealthy condition.

536 Q. 256. Those were curled up and some of them were brown and some of them a darker brown?

A. Yes sir, some looked brown and some a darker brown, that is on the oaks.

Q. 257. How are the leaves on the other trees, they were brown too, were they?

A. Some of the pine was brown, yes sir, and some hickory brown, and some hemlock with the needles still hanging on.

Q. 258. They were black?

A. No sir, a dark color, but not all black.

Q. 259. Were they red?

A. Well, I stood under the trees, I stood close to them and looked at them, I didn't climb the trees.

Q. 260. I didn't ask you about that. Now, as a matter of fact, a great many leaves begin to turn brown in August, do they not?

A. I never saw them in this country unless smoke killed.

Q. 261. When you see a brown leaf in this country you say it is smoke?

A. No sir, not when I see one or two.

Q. 262. Nothing in this country ever browns or kills the leaves except smoke?

A. No sir, I don't say that. I have seen lightning killed trees, some by fire, and some girded with an axe.

Q. 263. Now, you have filed some exhibits, I want to ask you about them, Mr. Shippen, I wish you would look at your Exhibit No. 1, which is a black taken out of a Spanish oak, and state if it is not a fact that tree shows that there was no check in its growth before 1907?

By COUNSEL FOR PLAINTIFF: We except to the question as the witness has not qualified as an expert, he has simply identified the section of the tree as cut by him.

Overruled. Appeal prayed and granted.

By COUNSEL FOR DEFENDANT: I guess he has eyes, has he not?

A. I see the last six years on this, very small growth, but if you look up here into the center you will see this is a very large even grown up here until you get to the last six years.

Q. 264. That is up until 1907?

A. Yes sir, about 1907 or 1908.

537 Q. 265. Since that time there has been a very small growth.

A. Yes sir.

Q. 266. That is true, is it not, that the rings are naturally smaller anyway, when the tree is larger?

A. No, I don't know, sometimes it is that way, in small trees this size. I have seen about a regular growth all the way around right to the outside.

Q. 267. Now, look at your Exhibit No. 2 and state if it is not a fact that it shows a check in growth in the year 1908?

By COUNSEL FOR PLAINTIFF: We except to the question on the same grounds as stated in the last question.

Overruled. Appeal prayed and granted.

A. I cannot see this without my glasses, I can see just where it has commenced, but cannot see how many years, unless I had a magnifying glass.

Q. 268. Look at the point near the defect in the tree, does not that show——

A. That is only a knot, counting away from that—that is right there, I think (pointing to block).

Q. 269. Look and see if 1908 is when that——

A. I cannot tell unless I had a glass, I cannot see that unless I had my glasses on, or if I had a magnifying glass.

Q. 270. It has been for the last few years?

A. It looks like it has been the last six or seven years.

Q. 271. Regular growth until it gets out there?

A. Yes sir.

Q. 272. Look at your Exhibit No. 3 which is a cross section of a poplar, and state if it is not a fact that it shows a very stunted growth about fifty years ago?

A. Well, here is a growth in there that is a big growth until you get near the outside. Here is a growth in here that is about equal, about four or five right there, of course, the hard wood sometimes is not so big as the wood out here. This is oval, not exactly a round tree.

Q. 273. This has really been a serious defect in the growth in here, is that true, from time to time?

538 A. For a while it may have been, the tree may have been shaded, might be some bigger poplars there, several years ago, and it might have been cut out and poplar is a timber that wants lots of sunlight and will not grow to good advantage under a shade. Here is some big growth here (Indicating) here is the check in the growth.

Q. 274. That is there was a big growth up to some six or seven years ago?

A. Yes sir, it may be that tree was shaded by older trees and then they were cut out from around it.

Q. 275. But any way, the last stoppage of the growth was six or eight years ago?

A. Yes sir, it seems to be stunted from some cause.

Q. 276. And something like fifty years ago there was also a stoppage in growth?

A. Yes sir, the growth here seems to be small until it gets out here, it gets bigger, then gets smaller again.

Q. 277. Your Exhibit No. 4, is it not a fact that tree shows no check in growth until 1906 or 1907?

A. Yes sir.

Q. 278. Now, is not the same true as to your Exhibit No. 5 which is a cross section of a black oak, don't you know that was checked some seven or eight years ago?

A. About seven or eight years ago, the last growth for seven or eight years was check- on that.

Q. 279. You are a saw mill man, of course, and you handle thousands of logs a year?

A. Yes sir, handle a good man-, we don't run the saw mill every day, don't get logs enough to run every day.

Q. 280. And you say you have had timber brought into your mill from all sections of North Georgia?

A. Yes sir, down almost to Atlanta.

Q. 281. You have had timber brought in there from around Epworth and up towards Blue Ridge and all through North Georgia?

A. Yes sir, we got some logs south of Blue Ridge, getting some now.

Q. 282. How many thousand logs do you suppose that your mill has cut within the last year?.

A. Five or six hundred thousand feet.

Q. 283. About how many logs do you suppose that would be?

A. Sometimes one log will make over a thousand feet.

539 sometimes it takes twelve logs to do that.

Q. 284. Can you guess at the number of logs?

A. About seven logs to the thousand feet.

Q. 285. How many thousand feet did you cut in last year, just give a guess?

A. Something like a million feet in 1913.

Q. 286. About how many logs would that make?

A. About seven logs to the thousand,—it would be something like seven hundred thousand logs.

Redirect examination.

By Mr. HILL:

Q. 1. Something was asked about the price paid for land you bought in 1895, did you pay a good price or was it a bargain?

A. We figured it a bargain, the first land we bought was during a panic and lumber yards and banks were failing there in Louisville at the time.

Q. 2. The land you bought in 1905?

A. We thought that was a bargain.

Q. 3. I believe you said the land you bought in 1895 you considered your money made when you bought it?

A. Yes sir, it was worth more, it belonged to a man in another business, and he lived at Mobile, Alabama, Charles W. Stanton.

Q. 4. Is all that land of yours in timber?

A. Yes sir.

Q. 5. Hardwood?

A. Yes sir, unless it may be four or five acres in lots.

Q. 6. But chiefly it is in timber?

A. Yes sir, it was bought for timber.

Q. 7. Has hardwood increased or decreased in value?

A. Increased very much.

Q. 8. How much?

A. Well, when we went to North Georgia seventeen years ago, we paid six dollars for poplar logs, and we have to pay twenty five dollars for the same logs now. We paid fourteen dollars a thousand for first and second poplar. To-day we pay forty four dollars for the same class of lumber.

Q. 9. Then do you attribute the increase in value to your
540 land to the additional growth of timber on it, and also to the increase in value of what timber is left?

A. Increase in value of the lumber, the lumber is worth,—the stumpage, the value has increased.

Q. 10. State whether or not if the forests were in a healthy condition, the value of your land would be more than it is to-day?

A. Yes sir.

Q. 11. Is that true all through this section?

A. Yes sir.

Q. 12. You filed a suit,—But you didn't know much about that, you did file a suit and settle with the Tennessee Copper Company?

A. We filed a suit, we compromised, they come forward and acknowledged they were doing us damage and settled.

Q. 13. Did you and Mr. Shippen, your brother, alone institute the State's law suit?

A. No sir, I didn't.

Q. 14. Has there been or not general complaint in this section?

A. Yes sir.

Q. 15. Did other citizens complain to the State?

A. I think so.

Q. 16. Have you seen delegations there at the Legislature?

A. Yes sir, I went there, and I was there about seven years ago, seven or eight years ago, in 1907, I think it was, a great many people there from Gilmer and Fannin Counties, two hundred I believe.

Q. 17. What were they doing there?

A. Wanting the Legislature to give them relief from this smoke up here.

Q. 18. Now, on the land you own, you say the timber has not been cut off?

A. No sir. The two thousand acres we did cut, we didn't cut that clean, ten years ago, cut the poplar and the other timber was not taken off.

Q. 19. In cutting what timber you have cut, did you just take the best timber and leave the other to grow on?

A. We cut the mature trees, which had reached their prime, and we left the others to grow.

Q. 20. Is that or not to keep a good growth of timber on the land all the time?

A. Yes sir.

541 Q. 21. Do the logs you get come from each direction?

A. They come from north and south of Ellijay, some have come in the last two or three years, from Murphy, and we got some there several years ago, beyond there.

Q. 22. Does a large part of your logs come from what you know as beyond the smoke zone?

A. Some way down almost to Atlanta, yes sir.

Q. 23. Now, about your notes you took there on those days, state whether or not the smoke, or the Ducktown smoke as it is known in this section, is the chief topic of conversation with the people?

A. When it comes in there and they get a good whiff of it, and it kills their stuff, they complain.

Q. 24. Is that the reason everybody in this section notices when it comes?

A. Yes sir, when it does damage.

Q. 25. Did you ever see a fog on a bright sunshiny day?

A. No sir, I have seen one after a rain, and a few hours after the sun comes out, I have seen it disappear.

Q. 26. It would disperse the fog?

A. Yes sir.

Q. 27. Last Saturday, do you remember whether that was a bright day at the time you saw the smoke?

A. Yes sir, the sun was shining when the train left Blue Ridge going south, a bright afternoon, no rain. It rained in the morning and then the sun come out.

Q. 28. Was the smoke in there to a great or small extent?

A. It was in there to a large extent.

Q. 29. Can you tell the difference when you see a fog in the mountains and when you see smoke?

A. Yes sir, I think I can.

Q. 30. Have you lived in the woods a good part of your life?

A. I have been in the woods a good deal in Pennsylvania and have been in the woods almost every summer for a week or more. I trout fish some, I am fond of that.

Q. 31. From your observation, can you tell a fog when you see it?

A. Yes sir, I think I can. I have been on the waters of Manthahala River in Macon County, North Carolina, forty-five miles
542 from Murphy, I was there a week fishing, and I saw timber there, some of it was in a healthy vigorous condition, and the foliage was good.

Q. 32. Can you smell a fog?

A. No sir.

Q. 33. This smoke that comes down there, can you smell it?

A. Yes sir, when I was a boy, up until I was fourteen years old, we used sulphur matches, used sulphur candles in disinfecting houses.

Q. 34. Mantahala River is in the Smokey Mountains?

A. It is near Standing Indian Mountain.

Q. 35. In the Smokey Ranges?

A. Yes sir.

Q. 36. How far is that east from here?

A. It must be about sixty miles.

Q. 37. Sixty or sixty-five miles.

A. Yes sir.

Q. 38. You don't know why they are called Smokey Mountains?

A. No sir.

Q. 39. You have never seen this smoke in that section?

A. No sir, I was there for a week.

Q. 40. About the Blue Ridge Mountains, he asked you if they ever looked smokey and hazy, did you notice that when the smoke was not in there?

A. Yes sir.

Q. 41. Can you tell the difference in that smoke and the haze that appears in the distance?

A. Yes sir, when the smoke is in there it is all blurred.

(Thereupon the further taking of testimony in this*n* cause is adjourned until 8 o'clock tomorrow morning.)

(Met pursuant to adjournment.)

The next witness, E. B. CLARKE, recalled by counsel for plaintiff, testified as follows:

Direct examination.

543 By COUNSEL FOR PLAINTIFF:

Q. 1. Since testifying last week, have you made any other trip out through Fannin County?

A. I have, yes sir.

Q. 2. In whose company?

A. In company with Dr. Hedgecock.

Q. 3. Where did you go?

A. One trip we went over to Hemp Top and from Hemp Top to Skeener Gap, and Swann, and then to Blue Ridge.

Q. 4. Was that east?

A. East and south east.

Q. 5. How far did you go on that trip, about how many miles did you cover?

A. That trip was about fifty five miles.

Q. 6. Then did you make another trip?

A. One trip we went over here about a miles north of Flat Top Mountain on Little Fightingtown Creek.

Q. 7. How much did you cover on that trip, how many miles?

A. About thirty miles.

Q. 8. Did you observe conditions of the forests as you passed through on those trips?

A. I did.

Q. 9. State what condition they were in?

A. The forest in general showed scorching and damage.

Q. 10. State whether or not the conditions which you describe as existing in the forests there, which you went on previously, would apply to these?

A. Yes sir.

Q. 11. Did you or not find that condition existing everywhere?

A. Found it more prominent in this last trip to Flat Top Mountain and Young Cane, in Union County.

Q. 12. How far is Young Cane from the plant of the Ducktow-Company?

A. By road, I would say it is thirty two miles.

Q. 13. Do you know how far it is air line? from the copper plant?

A. About twenty one miles.

Q. 14. Did you find the same evidence of damage there?

A. Slight discoloration of the leaves.

Q. 15. How did that damage appear as you came back
544 towards the Ducktown Coppr*t* Company's plant?

A. It was more prominent.

Q. 16. Now, on your trip west of here to Fightingtown Creek, describe conditions you found existing there?

A. They were similar conditions as we found and described on previous trips of last week.

Q. 17. Did you go on Big Frog Mountain west of the plants?

A. We did this week, yes sir, in Tennessee.

Q. 18. Did you notice the west slopes of the mountain?

A. Yes sir, the east and west slopes.

Q. 19. What were the conditions there?

A. Several places on the west slopes where there was very severe damage, on the east slopes, and one or two places spots of fully one hundred and fifty acres completely browned find the ground covered, badly scorched.

Q. 20. Was or not the conditions on the west slopes similar as in Georgia?

A. Similar, but not as severe on the east slopes.

Q. 21. On that trip west, what about the reproduction of the trees there?

A. I saw some reproduction, but not much. None indicated recent reproduction, that is for the past two years. Also at a saw-mill there, Joe Quintrell's, there were eight stumps pinus echinata, trees cut down this year. We went on the yard at the time, and made comparison of the growth for the past seven years as compared with the previous seven years. I took the measurements on each stump.

Q. 22. What was the results of those measurements?

A. I have it typewritten, just would like to tender it.

By COUNSEL FOR DEFFENDANT: You had better read it into the record.

By COUNSEL FOR PLAINTIFF: Just let the stenographer copy it into the record.

The statement referred to is as follows:

Measurements of the Growth of Pinus Echinata (Short Leaf Pine), Eight Trees, Taken August 15, 1914, *at the Joe Quintrell Saw Mill, One Mile North of Flat Top Mountain, on Little Fightingtown Creek, Fannin County, Georgia, Measurements Taken in Four Quadrants, Showing Comparative Growth During the Last Seven Years, the Previous Seven, and During the Life of the Tree.*

545	Years, 1 to 7.	Years, 8 to 14.	Years, 1 to 25.
Tree #1.....	7/8"	1 7/8"	8"
1		1 3/8	7 1/8
	7/8	1 1/2	7 1/8
	5/8	1 1/2	6 1/8
Average Radial Growth..	0.844"	1.56"	7.09"

Tree #2.....	7/8"	1 3/4"	11 1/8"	
	7/8	1 3/4	10 5/8	
	3/4	1 1/2	9 1/2	
	1/2	1 1/4	5 3/8	
Average Radial Growth..	.75"	1.56"	9.15"	28 yrs.
Tree #3.....	5/8"	1 3/8"	8"	
	3/4	1 3/8	6 5/8	
	3/4	1 1/2	7 3/4	
	1	1 1/2	8 3/8	
Average Radial Growth..	.781"	1.437"	7.69"	26 yrs.
Tree #4.....	3/4"	1 3/4"	8"	
	7/8	1 3/4	8 5/8	
	3/4	1 3/4	8 3/4	
	3/4	1 3/8	5 3/4	
Average Radial Growth..	.781"	1.656"	7.781"	
Tree #5.....	1 1/4	2 1/2	11 3/4	
	1 1/2	2 1/8	10 1/4	
	1 3/8	2 1/2	10 3/8	
	1	1 5/8	9 1/8	
Average Radial Growth..	1.281"	2.19"	10.375"	
Tree #6.....	7/8"	1 1/2"	7 1/8"	
	1	1 3/4	7 7/8	
	7/8	1 1/2	6 7/8	
	1	1 5/8	7 1/4	
Average Radial Growth..	.932"	1.594"	7.03"	
Tree #7.....	3/4"	1 5/8"	8 3/8"	
	7/8	1 3/8	9 1/4	
	1	1 3/4	10 3/4	
	1 1/8	2	11 3/8	
Average Radial Growth..	.937"	1.687"	9.937"	
Tree #8.....	1"	1 3/8"	6 3/8"	
	1	1 3/8	6 1/2	
	1	1 5/8	6 7/8	
	3/4	1 3/8	6	
Average Radial Growth..	.937"	1.437"	6.437"	26 yrs.

Average Radial Growth for All Eight Years.

1 to 7 years.	8 to 14 years.	1 to 28 years.
0.905 inches	1.64 inches	8.186 inches

546 Q. 23. You say those measurements were taken by yourself?

A. Yes, sir.

By COUNSEL FOR PLAINTIFF: We will just consider that is copied into the record.

Q. 24. Was Dr. Hedgecock with you at the time?

A. Dr. Hedgecock and Mr. Vestal, Mr. John Vestal and Mr. Sharpe.

Q. 25. Did Dr. Hedgecock assi-t you in making those measurements?

A. He did.

Q. 26. Now you stated there seemed to be some little reproduction, did you notice in regard to the young trees, I mean whether there were many within the past two or three or four years?

A. No, very few coming up from seedlings within the past two or three years. Of course, there were a few spots in a few places, but not general growth in probably ten or fifteen years.

Q. 27. The past four years, how was it?

A. Practically none whatever.

Q. 28. I hand you a section from a tree which I ask you to indicate as Exhibit No. 1 to your deposition, and state what that is Mr. Clarke?

A. That is a pinus echinata, short leaf pine, it is on that test tree. That is tree No. 2.

Q. 29. What did you determine from your examination of this section?

A. I want to show not only the fact that it shows a lesser for the past seven years than the previous seven years, and also that the growth of it is not symmetrical.

Q. 30. Now, Mr. Clarke, taking that section I will ask you to state whether or or not with an Intrement Borer you could determine the growth or the restriction in growth of the tree by taking one boring from the tree?

A. No, it would only show the growth in that particular spot.

Q. 31. Is that true in all these different sections?

A. Yes, sir.

Cross-examination.

By COUNSEL FOR DEFENDANT:

Q. 1. Now, Mr. Clarke, this section of the tree that you have introduced is exceptional, it shows an exceptional irregular
547 growth, does it not?

A. Yes, sir, it shows an irregular growth this is one we came across.

Q. 2. How many trees of that character did you find.

A. Several of them—I don't believe any one of the eight was symmetrical. That was the worst of the eight.

Q. 3. This was by far the worst of the eight.

A. It was one that was irregular, you will not find it by far the worst.

Q. 4. But this has grown two-thirds on one side has it not?

A. Yes, sir.

Q. 5. You didn't find anything else like that?

A. No, but this is for comparison, for the purpose of showing what the Intrement Borer would show in it.

Q. 6. You just wanted to show this was extraordinary?

A. No, not extraordinary not ordinary though.

Q. 7. Then it is not the ordinary conditions existing there?

A. No sir.

Q. 8. But now Mr. Clarke, if you come over on the side of this tree which has grown the slightest, and run in your Intrement Borer, that will show that the growth for the last seven years wasn't as great as for the previous seven years?

A. Yes, sir, it will.

Q. 9. If you go right over on the right side and run your Intrement Borer, it will show exactly the same conditions for the last seven years, but it has not grown as rapidly?

A. Yes sir.

Q. 10. So far as the final result is concerned, exactly the same thing would result?

A. Not necessarily.

Q. 11. Look at this here, state if that is not true, make no difference on which side you take the section it shows exactly the same results?

A. No sir, if you start right here and bore in you have from here up to here, you have not quite half an inch of growth, now if you take the instrument and bore into another spot, right here, (Measuring).

Q. 12. How much growth would you get there?

A. *58* of an inch.

Q. 13. You didn't understand what I meant, I say so far as the relative growth is concerned it makes no difference from which point you take your sections, that it shows for the last seven years
548 the growth has not been as great as for the previous seven year?

A. You would only strike that in case you hit the smaller spot.

Q. 14. But if you go in at any spot in that tree where you want to, does it not show that condition?

A. No two points,—you first have to determine the smallest growth.

Q. 15. I don't care about that—you point out any spot in that section where if you take a core with an Intrement Borer, it will not show the growth of that tree was less the last seven years than it was the previous seven years?

A. It certainly will, I am trying to tell you that, less the last seven years.

Q. 16. That will be shown regardless of where you take the core?

A. Yes sir, on this block, certainly, that the growth for the last seven years is smaller.

Q. 17. And any core taken from that, this sample you have introduced, taken from that sample regardless of the side on which it was taken it would show exactly the same results?

A. Probably will on that block.

Q. 18. Don't you know it will? Is it not before your eyes and can you not see it will?

A. It will there, yes sir.

Q. 19. You reach exactly the same results with that method of examination, that is the growth for the last seven years has been less than for the previous seven years?

A. Exactly.

Q. 20. Now, let's see if I can understand these figures you have introduced here. Take No. 1, do I understand that means for the last seven years No. 1 has grown .844. of an inch?

A. No. I took four sections of the tree, for instance like this (Indicating) in the growth, the first seven years, then seven to 14, and from there on, the total growth, getting 4 growths, one in each part. For the first seven years that growth was seven-eighths of an inch. The second seven years 1 7/8 of an inch, and from 1 to 25 years eight inches from the center to the outside, that is the measurement in four quadrants. The average growth from the center out, .84 inch. The second seven years 1.56 of
549 an inch. The average growth of the tree was 7.09.

Q. 21. That is the total average increase on an average?

A. Yes sir, I took four measurements on each tree.

Q. 22. Now from one to twenty five years that included the entire life of the tree?

A. Yes sir, I only found eight stumps there, they included different ages, most of the- included twenty five to twenty six and twenty eight years.

Q. 23. Now, in the first column, you say seven years, you mean 1 to 7 years inclusive. You compute it for 7 years?

A. Yes sir.

Q. 24. Then from 8 to 14 years, you include the 14th.

A. Yes sir.

Q. 25. That was for seven years?

A. Yes sir.

Q. 26. Then as I understand, for the last seven years, the tree grew on an average .12 of an inch per year, is that correct?

A. Well, yes, the average down, of course, it would be a good average, a growth of seven years of .84.

Q. 27. In the second seven years it grew a little over .22 inch?

A. It grew 1.56 inches.

Q. That is the first sample you have given here?

A. Yes sir.

Q. 29. Now could you tell any difference in the eighth year back and the seventh year back?

A. Difference in the growth?

Q. 30. Yes sir, the increase there, does it plainly indicate it?

A. Well, that is the increase, seven eighths of an inch is the average for the entire seven years.

Q. 31. Here is the average right here (Indicating on paper).
A. That is the average of the four sections.
Q. 32. 1⅞ of an inch is the average for seven years?
A. Yes sir, total, one section, yes sir.
Q. 33. That is the total?
A. For the seven years.
Q. 34. So you couldn't testify now whether there was any difference in the growth in 1906 and 1907?
A. I had not tried to do that.
550 Q. 35. Now, at whose instance did you make this last trip, these last trips?
A. Dr. Hedgecock and I decided we would go out on these trips.
Q. 36. So you have made these two trips in an effort to prove the Intrement Borer was not reliable?
A. In one sense, yes sir.
Q. 37. Do you think you have done that?
A. No, not to your satisfaction.
Q. 38. On your first trip how far did you go away from the furnaces?
A. Have you reference to the one on the east?
Q. 39. Which one did you take first, I believe you said you went to Hemp Top Mountain?
A. Yes sir, that would be about twenty one miles from Ducktown.
Q. 40. As a matter of fact there was a great deal of dry weather in here during the early part of the summer?
A. Well, we had some dry weather.
Q. 41. Didn't the weather get so dry it scorched up many of the leaves?
A. I couldn't say that it did.
Q. 42. Don't you know a great many of the leaves turn a sickly color and almost died?
A. I don't think we have had a dry spell that would cause that around here.
Q. 43. Have you not seen weather so dry it would cause a good deal of the timber to appear like it was killed dead?
A. No, I have not.
Q. 44. Didn't you see that in 1912, were you here in 1912?
A. I was all summer.
Q. 45. You were not through the hills and mountains at that time in East Tennessee?
A. No sir, I spent 1912 in North Carolina,—No, I spent it right here in Georgia.
Q. 46. So you know it to be a fact that extreme dry weather will cause leaves on a good many kind of trees to turn brown?
A. Cause them to curl up, but I don't think we ever had a dry spell enough for that.
Q. 47. How far did you go away from the road on these trips?
A. Didn't go away from the road at all on this trip to Young Cane.
Q. 48. Where was it you inspected these stumps?

A. We did that at the Fighting to-en Creek at Joe Quintrell's saw mill.

551 Q. 49. How far is that from the Tennessee Copper Company's plant?

A. About ten miles air line.

Q. 50. In what direction?

A. To the northeast, twelve miles from Isabella.

Q. 51. You speak of Big Frig Mountain,——

By Counsel for Plaintiff: Do you mean Quintrell's place was northeast of Ducktown?

A. No sir, Ducktown is northeast from that?

Q. 52. Big Frog Mountain is in Tennessee?

A. Yes sir.

Q. 53. Is that part of the land the Government has recently bought?

A. I don't think they have bought it, it is under contract.

Q. 54. Is that part of the Wetmore lands?

A. I think it is the Alaculsa lands.

Q. 55. The Government is contemplating purchasing those lands?

A. Yes sir.

Q. 56. How far is that located from the Isabella furnaces?

A. (Measuring on map) four miles, that is the nearest to the Tennessee Copper Company.

Q. 57. How far is that where you notice those patches from the Isabella furnaces?

A. Twelve miles.

Q. 58. How far were you from the Tennessee furnaces?

A. Just about the same, probably about a mile difference.

Q. 59. That was in almost an east direction?

A. No, west, the plants are east of Frog Mountain.

Q. 60. You mean the plants are east of Frog Mountain?

A. Yes sir.

Q. 61. Now you spoke of some of the lands being within four miles of Isabella?

A. You asked me how near the Government land was, and I said about four miles.

Q. 62. How far are those lands from the Tennessee Copper Company?

A. About four and one half miles from Isabella and four miles from the Tennessee Copper Company?

552 Q. 63. Now, is that thr Frog Mountain, this land you are talking about?

A. That is the extreme point of the Government lands.

Q. 64. That is along the end of Frog Mountain?

A. Yes sir, down about the foothills.

Q. 65. This Frog Mountain extends back about eight miles.

A. The top of Frog Mountain is approximately nine miles air line from Copperhill.

Q. 66. I asked you a while ago about those patches you spoke of any you said they were east of Forg Mountin?

A. I said some were twelve miles west of Copperhill, others were nearer, on the east side of the mountain.

Q. 67. Did you see any of those places east of part of the mountain and only four miles away from Isabella?

A. No, they wasn't that close on Frog Mountain.

Q. 68. Now those patches of trees and leaves, you say they were brown?

A. Yes sir.

Q. 69. You say you saw as much as 150 acres?

A. Yes, sir.

Q. 70. Then you would see great stretches that didn't have any appearance of being brown?

A. Didn't have the appearance of being almost completely killed, still they were damaged by smoke.

Q. 71. Didn't you see great stretches that had no appearance whatever of smoke fumes that you could see?

A. I cannot say that I did.

Q. 72. Can you say you didn't?

A. Yes sir.

Q. 73. To what extent were those great stretches scorched and browned?

A. I saw patches that looked like they were almost completely killed, one hundred and fifty acres, I saw two patches that size. I will further state that I didn't see any great stretches that didn't show any damage whatever.

Q. 74. You saw stretches of a good deal more than one hundred and fifty acres that showed no damage whatever?

A. I don't think I did.

Q. 75. Did you go up among it?

A. Yes, sir.

Q. 76. You just now testified you never got out of the road?

A. I said when I went to Young Cane, over there we was
553 about three days.

Q. 77. How far did you get off the road on that trip?

A. I don't know how far, we didn't see any road for two days.

Q. 78. Did you go all through those mountains on that trip?

A. Went through the mountains, I couldn't say we went all through them.

Q. 79. You went right around in these patches?

A. Yes sir.

Q. 80. You don't mean the trees were killed, you mean the leaves were scorched?

A. Yes sir, the leaves were scorched and dropping. Of course, that don't indicate the tree is killed——

Q. 81. You mean to swear those trees are dead?

A. I don't mean the trees are killed, they might put out again the next year and then they might not.

Q. 82. Now you said something about there was indication of reproduction in certain sections, about what sections were you testifying at that time?

A. Flat top.

Q. 83. How far is that from the furnaces?

A. Ten miles air line, where we were.

Q. 84. I believe you say for the last two years there has not been much indication of reproduction?

A. Not much seedlings.

Q. 85. Over how large a territory did you notice that?

A. All along where we went.

Q. 86. That is where you followed the road?

A. Yes sir.

Q. 87. You didn't get out in the forests at all?

A. Practically none, we went through a few acres, not enough to say that we went through the forests.

Q. 88. There was reproduction on up to two years?

A. No sir, most of it looked five, ten or fifteen year old.

Q. 89. Will you tell me why you limit it to two years and not more than that?

A. I said there was practically nothing come up the past few years.

Q. 90. Didn't you say the past two years?

A. Probably I did.

554 Q. 91. Do you know whether or not the ground has been burned over and the leaves which fell from the trees within the last two or three years?

A. The part I speak of hadn't been burned in the past two or three years.

Q. 92. Did it burn four years ago, and if so, could you have told it?

A. Yes sir, if it was a severe burn.

Q. 93. If you didn't go down and make an examination,——

A. Going along the road I could tell.

Q. 94. For how many years?

A. I said four or five years.

Q. 95. Did you ever look to see?

A. Yes sir.

Q. 96. You wasn't looking for that, you was looking for smoke, wasn't that what you were looking for?

A. No, not looking for smoke then, looking for damage.

Q. 97. Didn't you and Dr. Hedgecock — to find the smoke injury and wasn't you looking for that all the way through?

A. We were looking for smoke injury.

Q. 98. You wasn't looking for healthy trees, but looking for trees injured by smoke?

A. Yes sir.

Q. 99. Hence you were not calculated to see the good side but looking for the bad side.

A. We could see the good side, what was the use of looking for that, we were looking for smoke injury.

Q. 100. So you are swearing about the bad and not the good.

A. Certainly, we were looking to see if there was damage.

Redirect examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. Did you look at the good timber as you passed, you noticed that, but you made no examination of it.

A. No sir, we made no examination of it.

555 Q. 2. You were looking at the General conditions as you passed what was good and what bad?

A. Yes sir.

Q. 3. And the bad you examined?

A. Yes sir.

Q. 4. Mr. Clarke, going back to this section, state whether or not an Intrement Borer will show in any—at this point for instance, if you notice here, the relative growth for any two successive years to be the same as it will at this point?

A. No, it will not.

Q. 5. You say it shows a general retardation of growth for the past seven years?

A. Yes sir.

Q. 6. Will it show at any two points the same relative growth for two successive years during the past seven or eight years?

A. No, I don't think it would.

Q. 7. Is that or not why you say you don't think the borer would show exact conditions?

A. I don't think it will, and I don't believe anybody in the forest service would try to show the relative growth with it, it is used almost solely to determine the age of small trees under six inches in diameter, where you can get the core of the tree.

Q. 8. It will do that?

A. The Intrement Borer only takes out about six inches, you couldn't go to the center of that tree.

Q. 9. State whether or not it is the rule or exception of a tree to be perfectly symmetrical?

A. It is the exception.

Q. 10. That is, I understand, most trees are out of symmetry? As is this one?

A. Not probably as much.

Q. 11. But it is a rule that they are not symmetrical?

A. Yes sir.

Q. 12. Speaking of this list or record, you speak of the years from 1 to 7 and from 8 to 14 inclusive, by 1 to 7 which did you designate, the inside or outside?

A. The outside, started from the last growth of the tree.

Q. 13. You call the last ring No. 1?

A. Yes sir.

556 Q. 14. So you call from one to the other, that is really the last seven years' growth or life of the tree?

A. Yes sir, that is explained in the paragraph preceding that.

Q. 15. State whether or not the conditions which you found exist-

ing on these various trips of browned and parched leaves is injurious to the timber growth?

A. Yes sir, it is.

Recross-examination.

By Counsel for Defendant:

Q. 1. How far into a tree did you say the Intrement Borer will go?

A. Abour four inches.

Q. 2. You cannot get further than that?

A. Not without a special borer.

Q. 3. If there is one, you don't know anything about it.

A. The borer I used is three to three and one half inches.

Q. 4. Just as far as possible to go in?

A. Yes sir.

Q. 5. So if there are samples filed in this case five and six inches long with the cores taken out by the borers, you are not familiar with that?

A. I am familiar with the Presller borer. I understood that was the one you had reference to.

Q. 6. Anyway, if those samples are from five to six inches then they could not be taken out by a borer with which you are familiar?

A. Not the Pressler borer, you may have used some other kind of borer.

Q. 7. Who said anything about any other kind of borer that was used?

A. You didn't say anything about the kind that was used but you asked me if I was familiar with the Pressler borer.

Q. 8. Didn't you say you was?

A. Yes sir.

Q. 9. And wasn't that the reason you were asked?

A. I don't know.

Q. 10. What other kind of borers are there besides the Pressler?

A. I don't know of any other, that is the kind I use.

Q. 11. Where is that manufactured?

A. I don't know.

557 Q. 12. You are not familiar with the Swedish Intrement Borer?

A. No sir.

Q. 13. The one manufactured there and cannot you purchase in this country?

A. No sir.

Q. 14. You never saw that?

A. No.

Q. 15. You don't know anything about it?

A. No sir.

Q. 16. Didn't you make a mistake when you told Mr. Hill that if you take an Intrement Borer and go into this tree, (Indicating) at different points, that it wouldn't show the relative growth for the last seven years. Is not this what you meant to say, that the borer

wouldn't show the same growth on a different side for the same years?

A. That is what he asked.

Q. 17. That is what you meant, wasn't it?

A. I answered his question, yes sir.

Q. 18. How far is it to the heart of the tree from the outside, Mr. Clarke, your Exhibit No. 1.

A. At this point, (Indicating) about four and nine tenths inches

Q. 19. That is the narrow point?

A. Yes sir.

Q. 20. The broader part, how much is it?

A. Almost eight and one half inches.

Q. 21. It has grown nearly two times as much on one side as the other, that is true, not only the entire life of the tree, but it is true from seven years ago. It grew two times as much on one side as the other?

A. Yes sir.

Q. 22. Up to about seven years?

A. Yes sir.

Q. 23. Do you have any idea what caused that? Wasn't there a wound in that side of the tree—when was this gap cut?

A. That was there the logs was cut, I cut the rest off in order to carry it in.

Q. 24. Do you have any idea what caused that irregular growth?

A. Probably shaded on one side or on a hillside.

Q. 25. Anyway there was some local cause that caused it?

A. Yes sir.

558 Redirect examination.

By Counsel for Plaintiff:

Q. 1. Mr. Clarke, look at the rings around the outside of that tree, state whether or not the second ring at this point (Indicating) is wider than the second ring at this point, take this point here?

A. (Looking at block.) It is.

Q. 2. State whether or not the first ring at the same point here is wider than the first ring at this point?

A. Yes sir, it is.

Q. 3. Then if a ring shows wider for the year 1912 at one point than the ring for 1912 at another point, and shows narrower at 1911 at the first point than the ring for 1911 at the second point, would that show the relative growth for those two years?

A. I couldn't say it would.

Re-cross-examination.

By Counsel for Defendant:

Q. 1. Now, I call your attention to the point here designated by Mr. Hill, is it not a fact this shows that growth for the last two years is much in excess of the growth for the previous years?

A. Combined or separate?

Q. 2. Separate?
A. I cannot say they do.
Q. 3. Take this (Indicating) look at this point, look there,——
A. Well, you pick out one point.
Q. 4. State if four fifths the distance from here to here shows the growth in the last two years as much in excess than the growth for the previous two years?
A. No sir, look here.
Q. 5. Well, we will say nine tenths, don't it show growth for the last two years in excess?
A. I say no.
Q. 6. Are your eyes good?
A. You can examine it.
559 Q. 7. I have examined it—that is all.

The next witness, GEO. W. HEDGECOCK, recalled, by Counsel for Plaintiff, testified as follows:

Direct examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. Since you- deposition was given the other day, have or not you made any other trip to Fannin County?
A. I have, made two trips from Blue Ridge, one over in Tennessee, starting from Etowah.
Q. 2. Did you go into Union County, Georgia, to Young Cane?
A. Yes sir, went to Young Cane in Union County by one route and returned by another.
Q. 3. About how much distance did you cover?
A. We went from fifty-five to sixty miles.
Q. 4. Did you or not find the general conditions existing which you described in your deposition last week?
A. Yes sir, but not so severe.
Q. 5. Were those points further away?
A. Much further.
Q. 6. Where was your next trip to?
A. West from Blue Ridge, we went to the base of Flat Top Mountain, about a mile from the top of it.
Q. 7. How far was that from the plant of the Ducktown Copper Company, if you know?
A. About ten miles from Copperhill, almost ten and a half from Isabella.
Q. 8. Did you or not find the same general conditions existing in that direction?
A. We found the injury much more sever- in that direction, but not quite so severe as it was north and northwest, I am speaking now of acute injury.
Q. 9. Were those in what you denominate the chronic zone of injury?
A. In the chronic zone, the acute is north rather from where we went on this trip.

560 Q. 10. Now did you make another trip?

A. We made a third trip from Etowah down to Conasauga and out through there, went up on Big Frog Mountain and returning back down to Cisco.

Q. 11. Were you on foot or in conveyance?

A. Part of the time in conveyance, about eleven miles east of Conasauga, and then on foot, we went beyond the top, returning back to Chables place and then took a horse from there to Cisco.

Q. 12. How long were you out?

A. Three days on that trip.

Q. 13. In the woods the entire time?

A. In the woods practically all the time from eight o'clock in the morning of the first day to three o'clock on the afternoon of the third day.

Q. 14. Did you spend any nights in the woods?

A. We spent one night entirely in the woods.

Q. 15. Were you on the roads or through the forests?

A. We were traveling largely on trails, on mountain roads occasionally and frequently out in the forests.

Q. 16. What conditions did you find existing on that trip?

A. I found chronic injury beginning at a distance of about fifteen miles air line from Copperhill and about sixteen miles from Isabella to the southwest of Big Frog Mountain. This chronic condition continued all the way as we drew near to Big Frog Mountain, and I noticed the acute injury on a number of the leaves on the west slope of the Big Frog Mountain, found acute injury, and some on top and over the east side, I found large areas of acute and chronic injury there throughout the whole territory.

Q. 17. What conclusions did you reach as to the traveling of the smoke, by finding it on the west slopes?

A. It goes over or around the Big Frog Mountain.

Q. 18. Was that damage due to sulphur dioxide?

A. It is, in my opinion, due to that, exactly like damage produced by it.

561 Q. 19. Do you know Dr. Haywood, in the Government service?

A. Yes sir, I know him.

Q. 20. Are you familiar with the zones of injury fixed by him in 1907?

A. Yes sir, I talked with him personally about the injury and am also familiar with his bulletins.

Q. 21. Are those the Government Bulletins?

A. Yes sir.

Q. 22. Have you seen the map drawn showing that?

A. I have seen a map drawn by the Forest service, gotten up by Mr. Patterson.

Q. 23. From all your trips to this section, I will ask you to state, and from your familiarity with the zones as fixed by the forest service, I will ask you to state whether or not there has been any dimunition or retardation or restriction rather of the zone since, 1906, 1907.

A. All the points I have visited was none, in fact in one direction there was an increase, to the west.

Q. 24. And in other directions?

A. It is about the same so far as I can see from what was described, in this area.

Q. 25. What did you notice in those sections as to the dropping off of the growth of the trees?

A. We couldn't tell except by taking sections of the trees.

Q. 26. That is what I mean.

A. We took one yesterday on Little Fightingtown Creek near Quintrell's saw mill north of Flat Top Mountain.

Q. 27. What did you find from that?

A. We found some eight trees, pinus echinata, the short leaf pine, we cut the stumps where we found them, we were interested to find out the diminution in the growth. We took exact measurements of the growth of these trees beginning for the past seven years, then for the previous seven years, then for the growth of the last seven. This was taken in four quadrants in each tree, and they were computed on the average growth and it has been submitted by Mr. Clarke.

Q. 28. Does this effect which you have described come from the injury of the leaves?

562 A. It comes both from acute injury and chronic injury, it may also come from what we call invisible form of injury.

Q. 29. That is caused by what?

A. Interference with the growth of the tree by sulphur dioxide.

Q. 30. Do you find that existing not only in trees which shed their leaves but also in conifers?

A. We find it existing in all kinds of trees. The conifers will show that condition.

Q. 31. How does this prevent assimilation?

A. In conifers the sulphur dioxide affects the starch production. In the first it affects the direct production and in the second place it interferes with the dissolution of the starch in the fall. Both conifers and deciduous trees in the fall dissolve the starch in the leaves and take up all of that in the winter. Where the tree is healthy in the early spring there is no starch in the leaves, and you will find in smelter regions where Si02 is in the smoke this starch dissolution is interferred with and the leaves are injured, and the trees are injured. They carry the starch past the period where they normally carry it and is unable to use it.

Q. 32. And injures the leaves on the gree- trees?

A. Yes sir.

Q. 33. Does that interfere with the assimilation of the starch in the leaf of the tree?

A. It does.

Q. 34. Where does the tree obtain nutriment for its growth?

A. From the leaf, obtains sap and mineral solution from the soil and from the air they build up the other constituents.

Q. 35. Then in the coniferous trees, even though they retain

their leaves, if the assimilation is interferred with the growth of the tree is retarded as if the leaves had shed off?

A. Exactly, in fact, it is more injurious if the leaves stay on the same in winter as in summer.

Q. 36. What is the effect of sulphur dioxide in the color of trees, grass and corn?

A. In the acute form of injury, it is a brown, then later on, it affects it until finally it is almost white.

Q. 37. Have you had much experience in the the taking of sections?

563 A. I have taken many sections, thousands of them at least in my work around Anaconda. I have taken sections in healthy forests around Leadville, Colorado.

Q. 38. Have you or not examined the sections introduced by Mr. Clarke?

A. Yes sir, I took the measurements and Mr. Clarke noted them down and figured the tables.

Q. 39. Have you examined the sections introduced by Frank Shippen?

A. I have.

Q. 40. Could you state whether or not those sections show a restriction of growth for the past seven years?

A. In general they do.

Q. 41. Show a restriction?

A. Yes sir, greater than normal in the past seven years. All trees are restricted in growth as they grow older.

Q. 42. That is what you call a normal restriction?

A. Yes sir.

Q. 43. This you say, was greater than normal?

A. Yes sir.

Q. 44. Now, Doctor, taking the section that Mr. Clarke introduced, state whether or not an Intrement Borer would show with a core from that tree the relative growth of the tree all the way around for any two successive years?

A. It will not for any two successive years.

Q. 45. Then is or not the Intrement Borer an accurate method for determining the growth of a tree?

A. It is not.

Q. 46. Are you familiar with the Intrement Borer?

A. I am.

Q. 47. Have you had experience in buying them?

A. Yes sir, I purchase them, that has been in my charge from our office.

Q. 48. What is the borer used for in your department?

A. It is used mainly in determining the growth of young trees where we didn't want to cut them down. When we want to get the growth of mature trees, we generally work in lumber regions, but in young trees we use it to find out how old the tree is, or get the rate of growth of any two successive years.

Q. 49. What is the method you use in the forest service in determining the relative growth?

564 A. I cannot speak for that office.

Q. 50. Well, in your pathological department, the method for determining the annual ring growth, do you take cores for the Intrement Borer or take sections?

A. We take several sections in a tree, where we make a study of them.

Q. 51. Have you had any occasion in your service with the Government to make a study of the diseases of trees?

A. That is my business.

Q. 52. Have you studied diseases known as chestnut blight?

A. I have not gone into an intense form of the study. I have directed the work, been in charge of the office and directed the men who are investigating it. I have been out in the field and looked over the trees and the general effect on the trees, on several trips, and I have the reports of all the men at work and know the progress of the disease and where it is found, and have men scouting all over the United States to ascertain how fast it is spreading.

Q. 53. You have been in charge of that work?

A. I have been actively in charge at period- ranging from two to four months per year.

Q. 54. State from that investigation of the forests of North Georgia you have found any evidence of the chestnut blight here?

A. I have not found it any further south than Virginia and West Virginia. It has been found in North Carolina nursery, I don't remember which one, but I know it has been found there.

Q. 55. Have you noticed the number of stacks around the Ducktown plant other than smelter stacks?

A. Yes sir, I noticed several of them.

Q. 56. Approximately how many?

A. Oh, I have seen at least five.

Q. 57. Do they emit smoke?

A. Yes sir, usually a black smoke.

Q. 58. If the boilers from which those stacks come burn coal, what would be the effect of the smoke there?

A. It would tend to produce carbon, and also sulphur dioxide.

Q. 59. What effect would the carbon in smoke have on the field of the smoke?

A. The carbon tends to drop before it goes far, the smoke
565 tends to clear itself of the carbon, leaving the sulphur dioxide, which is lighter.

Q. 60. Does it go as far as the sulphur dioxide?

A. The carbon would not, the sulphur wouldn't go quite as far.

Q. 61. If several stacks were producing sulphur dioxide in addition to the furnace stacks, would that tend to increase or decrease the amount?

A. It would tend to increase it in proportion to the sulphur dioxide turned out.

Q. 62. Would it add to the fumes sent out by the furnace stack?

A. It would.

Cross-examination.

By COUNSEL FOR DEFENDANT:

Q. 1. Doctor, I believe you have stated before you were not a chemist?

A. I am not a professional chemist, I have had three years' training in the University.

Q. 2. You say that carbon dioxide is lighter or heavier than sulphur dioxide?

A. I didn't say anything about carbo- dioxide.

Q. 3. What were you talking about?

A. Soot, carbon, ordinary soot. That is one of the common terms.

Q. 4. Then soot is heavier than sulphur dioxide?

A. It is heavier than sulphur dioxide.

Q. 5. How much?

A. I don't know, I know it is heavier.

Q. 6. What makes you think it is?

A. I know the atomic weight.

Q. 7. What is it?

A. I don't know exactly, I know that soot is a mineral combination and no gass I know of is as heavy as mineral.

Q. 8. You think the soot filters out of the smoke?

A. Yes sir, drops out of the air.

Q. 9. Have you not seen columns of coal smoke floating in the air for miles and miles and miles?

A. I have seen the residue of the smoke float for miles
566 and miles, I have made some observations on soot.

Q. 10. You have been in Pittsburg-?

A. I have been there, but never made any study in there.

Q. 11. You know around Pittsburg- for twenty miles you can hardly see the sun on a bright day?

A. I know it is smoky.

Q. 12. That is on account of the soot from coal smoke?

A. I know it is largely soot.

Q. 13. That is so in all manufacturing cities of the country?

A. Yes sir, soot is very prevalent.?

Q. 14. That is so around switch yards?

A. Yes sir.

Q. 15. You know that there is some sulphur dioxide in all coal smoke?

A. Yes sir, most of the coal contains sulphur I understand.

Q. 16. When you came here from Washington, you came through tunnels?

A. Yes sir, I coughed too.

Q. 17. It always does make you cough?

A. I never go through one unless I have to.

Q. 18. Is not that the same sort of sensation you have when you come in contact with the sulphur dioxide here?

A. It don't come in such intense form here as in that tunnel.

Q. 19. You wouldn't — to stay with it,—don't the Baltimore tunnel have something like the same effect?

A. It does.

Q. 20. Did you ever experiment with sulphur dioxide?

A. Not directly.

Q. 21. Do you know the specific gravity as compared with air?

A. I don't know it exactly.

Q. 22. Did you ever see it?

A. Well, in making it, it is really visible in one form, I have made it.

Q. 23. As a matter of fact is it not an invisible gas?

A. That is largely so, it makes a haze in the air.

Q. 24. A kind of dim haze?

A. In sufficient strength it produces a haze.

Q. 25. Have you ever analyzed the smoke that comes out of these furnaces?

A. No sir.

567 Q. 26. You don't know what the contents of it is?

A. I know nothing except from reports.

Q. 27. You have seen smoke and know its appearance?

A. Yes sir.

Q. 28. You stated it has the color of fog?

A. It is a bluish color, somewhat like the color of fog.

Q. 29. Do you know what causes that bluish color?

A. Exactly, sulphur I suppose.

Q. 30. Don't you know that is not right?

A. I would lay it to sulphur.

Q. 31. Don't you know there is zinc in that ore?

A. I don't know it.

Q. 32. Don't you know when there is zinc in the air that it produces a bluish color?

A. It produces a white formation.

Q. 33. It is not a bluish formation?

A. Not if I remember what I have seen, the formation is more white.

Q. 34. But you will not swear about that?

A. Yes sir, I will swear as far as I remember and to the best of my knowledge zinc is white, I swear positively.

Q. 35. Do you swear that oxide of zinc is white?

A. I have seen zinc formation.

Q. 36. Don't you know the formation produced by zinc is blue, and is it not a fact that the blue appearance in this smoke comes from zinc in the ore?

A. I don't know.

Q. 37. You have talked about this disease, fung-us disease in the chestnut, as a matter of fact, that disease has never come into North Georgia, is that true?

A. No sir.

Q. 38. You have talked about your boys scouting for fungus disease in chestnut, your boys never scouted in North Georgia, is that true?

A. No sir.

Q. 39. What boys were they?

A. I would have to have the record made by them on the trip, made by the men.

Q. 40. As a matter of fact you don't know whether they have been here?

568 A. I have Prof. Battle and Prof. Shell, I have their reports of having been here.

Q. 41. Whereabouts?

A. I don't know the exact points, I know three of them have been down here.

Q. 42. You don't know where they went?

A. I know they were in North Georgia.

Q. 43. You don't know whether they were in Gilmer or Fannin County?

A. I don't know what County they were in, I don't carry those things in my mind. Last year I had over fifty men out in the field.

Q. 44. In regard to these blocks present here, take the one present by Mr. Clarke, is it not a fact that if you take the Intrement Borer and bore into that block from any point, that it will show for the last seven years that the growth of that tree was less than for the previous seven years?

A. I think it will for seven years.

Q. 45. So, in that respect, that is so far as the growth is concerned, the Intrement Borer will give a substantially true showing of the tree, regardless of the point where it is inserted?

A. No, I wouldn't say it that way.

Q. 46. What way would you say?

A. I can say that for the larger number of rings the nearer it would approach accuracy and the smaller number the further away it would be.

Q. 47. With a good interment borer, can you go to the heart of the tree?

A. Yes sir, you could?

Q. 48. What Intrement Borer do you purchase for the Government?

A. We buy the Swedish make now, I don't remember the name.

Q. 49. How long have you been using that?

A. Fro the last two years.

Q. 50. Mr. Clarke, knew nothing about that, that is to say he never used that borer, when he was using them youn bought other makes?

A. Used the Pressler, I presume.

Q. 51. That is not as good as the other?

A. If I remember right it was not.

569 Q. 52. You did try to use the pressler yourself?

A. We tried to and it wasn't a satisfactory borer. It does good work but not so far as getting the core out.

Q. 53. Didn't you say you couldn't tell the direction of the way the tree was growing, a section taken out by the Intrement borer, provided the bark was knocked off?

A. I said you couldn't be certain as to what part of the tree—couldn't be certain as to whether it was the outside or middle. Some trees have very large soft grain and you couldn't be certain as to what part of the tree the bark was on?

Q. 54. Don't you know the spring growth and the fall growth?

A. Oh, yes, you can tell in conifers which is the spring growth and fall growth.

Q. 55. Can you tell that in any kind of tree?

A. Well, you have to have experience, I could learn to tell in any kind of tree, I have not had experience with all kind of trees.

Q. 56. Anyway, if you develop,——

A. I wouldn't make statement of that kind until I was satisfied from the kind of tree.

Q. 57. The rings in a tree are larger for the first year are they not, and then gradually decrease?

A. Not always.

Q. 58. Is not that the general rule?

A. The very early growth is short.

Q. 59. Is it not the general rule for the early years, that the growth for the early years, except the first two or three years, are the larger growth?

A. Only in open forests, not in crowded forests. Most forests are crowded.

Q. 60. Don't about all of the samples filed show that the early years are the larger growth?

A. I don't know.

Q. 61. Look at that section filed by Mr. Clarke, what does that show with respect to the first year or two?

A. This shows an increased growth after the tree was probably ten years old, on up to,—I will have to count,——

Q. 62. Just guess at it?

570 A. It shows a slight increase after a few years and then decreased.

Q. 63. You stated on your examination in chief the general rule was when a tree got larger the rings were smaller?

A. Approaching maturity it is that way.

Q. 64. The first trip you made was in Tennessee?

A. Yes, sir.

Q. 65. You didn't examine any timber or forests on that occasion that was in Georgia, on the third trip?

A. Yes, sir, I was through Georgia forests part of the way.

Q. 66. How much?

A. Going to Cisco. I passed through Georgia forests, we went on Big Frog Mountain and off into Georgia, really about the only time I was in Georgia was on the trip to Cisco to take the train.

Q. 67. I believe you stated on your other examination you didn't regard Hasslouf and Lindal as very high authority because neither one of them were botanists?

A. I don't think I said that.

Q. 68. What did you say?

A. I said as chemists they were good authority, but I don't so consider them as botanists.

Q. 69. What was Lindal?

A. He was a botanist.

Q. 70. Look at his work, and the work of those two men, and state if it is not a fact, that he was an instructor in botany and curator to the Botanical Museum?

A. Yes, sir, Lindal was, as a systematic botanist, he has a good reputation.

Q. 71. Do you think he don't know anything else?

A. No, sir, I don't say that, he is a highly respected man.

Q. 72. I believe there have been quite a lot of samples shown here of reputed smoke injury, have there not?

A. Not many, outside of what I collected.

Q. 73. Has not Mr. Vestal brought to you a whole suit case filled up with specimens?

A. No, sir.

Q. 74. A great many?

A. No, Mr. Vestal didn't bring me any at all.

Q. 75. Who did?

A. I have had a few specimens handed me, I don't remember who handed them to me. I saw Mr. Vestal's specimens at his place.

571 Q. 76. You examined quite a number there?

A. About half a dozen. They were all smelter injury so far as I could see.

Q. 77. Now, if a tree shows no appreciable retardation of growth, then it has not been injured either chronically, acutely or invisibly?

A. How is that?

Q. 78. If a tree shows no appreciable retardation of growth, then it has not been injured, either chronically, acutely or invisibly?

A. It would be hard to say.

Q. 79. If it has not been retarded in growth, it has not been hurt?

A. I never know how much it would have grown had it not been slightly injured, if I could tell how much it would have grown without injury, then I would know.

Q. 80. If the growth appears to be absolutely normal,——

A. If the tree is growing rapidly I would say it had very little injury.

Q. 81. If growing normally?

A. If it was growing normally or rapidly and in good condition.

Q. 82. So if a tree has a healthy growth and continues to have, would you say that tree had any injury?

A. If the tree is healthly and growing well, and I see no sign of injury, I would say it was a healthy tree, so far as I could see.

Q. 83. Suppose you didn't examine the roots or branches, but cut out sections and see that the growth has been normal and healthy, would you judge that has been a diseased tree?

A. I couldn't say, there might be some disease and still show that.

Q. 84. You wouldn't diagnose it as a diseased tree?

A. No, but that I could not see it was diseased.

Q. 85. Would you swear to the best of your judgment that it had been a tree in normal condition and not diseased?

A. I would refuse to swear, I would have to see the whole tree before I would swear about it.

Q. 86. Anyway, so far as the growth of the tree is concerned,——

572 A. I would want to see above the ground at least,——

Q. 87. But so far as the growth of the tree was concerned would you swear it had been retarded?

A. I wouldn't swear it was not, unless I knew all the conditions aside from the smelter smoke. There might be other conditions.

Q. 88. So it is that when a tree shows absolutely normal growth and you have no evidence except the growth of the tree, you would refuse to swear that tree had not been injured?

A. I would refuse to swear what might have happened during the lifetime of the tree.

Q. 89. Wouldn't that be owing to whether the copper company called you or the State of Georgia called you?

A. It would not, and I object to the insinuation.

Q. 90. Have you not sworn to a great many things that is more unreasonable than that testimony would be?

By COUNSEL FOR PLAINTIFF: We except to the question as argumentative, irrelevant and immaterial.

Overruled. Appeal prayed and granted.

A. (No answer.)

Q. 91. I show you Exhibit No. 9 filed by you, does not that show the growth for the last year was not injured?

A. All those specimens show that the leaves were injured.

Q. 92. I am talking about the growth for 1913.

A. It has but one year's growth there.

Q. 93. Do you mean to swear that does not indicate, the last year's growth too, as well as this?

A. Yes, it is this year's growth from here up, here is the previous year's growth.

Q. 94. That is what I am talking about.

A. Part is there.

Q. 95. Well, the part that is shown there, shows that during that season it was not injured?

A. Possibly not acute injury, they are a little chloratic.

Q. 96. That is because you cut them off, they begin to dry up, is not that the reason?

573 A. No, sir.

Q. 97. You think that cutting the twigs entirely off and separating them from the source of nourishment wouldn't injure them at all?

A. No, sir, they dry up to- quickly to show anything of that sort, this dried very quickly, if it had dried slowly it would yellow.

Redirect examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. I will ask you from that sample which was introduced by Mr. Clarke, the growth for the past seven years, those rings have been what you denomiate as normal growth?

A. No, it has not, below what I would expect in this species of trees, especially if it had been growing rapidly in the past.

Q. 2. When at maturity you say the rings become smaller?

A. Yes, sir.

Q. 3. State whether or not those rings have become normally smaller, or subnormally or abnormally?

A. Leaving aside the term subnormal, I would say they are smaller than I would expect to find at this age as compared with the previous growth of the tree.

Q. 4. The tree from which this sample was taken was a mature tree?

A. It is not, it should not be at that age, it may be approaching what we would call premature maturity, premature death, in other words.

Q. 5. Now*m* this sample here, you say a core taken with an intrement borer will show a restriction of growth for the past seven years?

A. Yes, sir, shows average restriction, not uniform but irregular.

Q. 6. Could you take this sample and bore in at this point for instance, the last ring is wider than the previous ring, and this point, where it is narrower than the previous year's ring, and say from the borings taken what was the growth, tell the correct growth for the previous year?

A. No, you could not, no two rings are uniform.

574 Q. 7. Could you go in at any one point here and undertake to say that the growth had increased in 1907, a little more in 1909 and more in 1910 up to the present time, in that tree?

A. Yes, sir.

(It is stipulated between Counsel for plaintiff and defendant that the map introduced by Mr. Clarke as Exhibit No. 2, the green and red lines thereon, have nothing to do with the issues involved in this case, merely indicating the area in which the Government is contenplating the purchase of lands in what is known as the Cherokee area, and it is not introduced for the purpose of showing distances.)

The next witness, J. H. SETZER, having first been duly sworn, testified as follows:

Direct examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. What official position do you hold in this county?
A. Deputy Sheriff.
Q. 2. How old are you?
A. Fifty-six years old.
Q. 3. Where do you live?
A. Epworth.
Q. 4. How long have you been living there?
A. Going on six years.
Q. 5. How long have you lived in Fannin County?
A. About eighteen years.
Q. 6. What business are you engaged in?
A. Blacksmithing mostly, I farm some.
Q. 7. Have you ever been up around the Ducktown and Copperhill furnaces?
A. Yes, sir, been there several times.
Q. 8. Have you ever seen the smoke coming from those plants?
A. Yes, sir.
Q. 9. Have you ever seen or smelled the smoke in your neighborhood where you live?
575 A. Yes, sir.
Q. 10. How does it smell and look as compared to the smoke you saw there at the plants?
A. About the same.
Q. 11. Have you ever noticed how it is when you see the smoke on the mountains or in the coves?
A. How is that?
Q. 12. Have you ever noticed in particular the timber when you saw the smoke on the mountains and in the coves?
A. Yes, sir, I have noticed it.
Q. 13. Have you ever examined the crops and timber shortly after you saw the smoke there?
A. Yes, sir.
Q. 14. What condition would you find them in?
A. Find the crops bit and the leaves bit up.
Q. 15. Now, what do you mean by that, what is the appearance of the leaves?
A. Crisped up, crisped up like it was scorched.
Q. 16. Does that condition exist in the leaves of the trees?
A. Yes, sir.
Q. 17. Have you ever been up on a high ridge or hills or mountains around your place?
A. Yes, sir.
Q. 18. Looking over into Tennessee?
A. Yes, sir.

Q. 19. State whether or not you have ever seen the smoke coming from that direction?

A. Yes, sir, I have seen it at different times.

Q. 20. Have you seen it come from the Tennessee plant at Copperhill?

A. Yes, sir.

Q. 21. Have you ever seen it coming from the Ducktown Copper Company's plant?

A. Yes, sir.

Q. 22. Have you watched that smoke?

A. Yes, sir.

Q. 23. Where would it go?

A. Come across toward Georgia, toward Epworth.

Q. 24. Have or not you ever seen it settle down around those places?

A. Yes, sir.

Q. 25. What has been the conditions of the crops and timber the past few years?

A. Well, it has been pretty bad.

Q. 26. Do you remember any dates in this year that you have seen the smoke?

A. Yes, sir, it was over there on the 3rd of July. One
576 date, and then it was there about, before that, about the 8th and 10th of June.

Q. 27. Of this year?

A. Yes, sir.

Q. 28. Did you notice any effect from the smoke you saw there on those occasions?

A. Yes, sir.

Q. 29. Describe that?

A. I saw it where it bit the corn and beans, where it crisped them up, and killed the potatoes.

Q. 30. How long after the smoke was there did you notice that?

A. The next day.

Q. 31. How long was the smoke in there?

A. Why it had settled in there in a day, sometimes 9 and 10 o'clock and stay until 2 or 3 o'clock, sometimes, I wouldn't notice exactly when it would go out.

Q. 32. Stay there several hours?

A. Yes, sir, several hours?

Q. 33. You say it killed your potatoes?

A. Yes, sir.

Q. 34. What appearance did the leaves of the potatoes have then?

A. Crisped up and dying.

Q. 35. Did you go into the forests and woods at that time?

A. Yes, sir, I have been around in the forests around Epworth, never been out in the mountains at that time.

Q. 36. What appearance did the leaves have at that time?

A. Browned with smoke.

Q. 37. Do you remember any other dates when the smoke was over there, this year or last year?

A. Well, it was there, I don't remember, I had a crop planted on J. P. Quintrell's place in 1913.

Q. 38. Have you seen Mr. Quintrell here in the courthouse?

A. Not J. P. Quinterll.

Q. 39. Have you seen his brother?

A. Yes, sir, and on the 11th of May, and the 12th it bit my corn and beans and potatoes.

Q. 40. Now about the 11th or 12th of May, had you just come back from a trip at that time,—you were a witness in Mr. Vestal's case?

A. No, I was not a witness.

577 Q. 41. Have you ever been a witness for him?

A. I was on the first trial.

Q. 42. Were you on the last trial?

A. In December, November or December last, 1913.

Cross-examination.

By COUNSEL FOR DEFENDANT:

Q. 1. You have talked to Mr. Vestal about this case, have you not?

A. No sir, not,——

Q. 2. Never said a word to him about it?

A. Have met him and talked about it some.

Q. 3. You live near him?

A. Yes sir, close by.

Q. 4. He never mentioned the matter to you?

A. Never said much about it to me no way.

Q. 5. He is sitting and telling the counsel what to ask you?

A. I don't know what he is telling.

Q. 6. You saw him whispering to the lawyer?

A. Yes sir.

Q. 7. You was his witness in the Federal Court?

A. Yes sir.

Q. 8. At the time the jury decided against him?

A. Yes sir.

By COUNSEL FOR PLAINTIFF: We except to that, that is a record and it would be the best evidence.

Q. 9. You say you saw smoke in there on the 11th and 12th of May, 1913?

A. Yes sir.

Q. 10. How do you remember those dates?

A. The way I know it was that date, they said that it was said that the Tennessee Copper Company was shut down, and had cut off their gas.

Q. 11. But it had shut down long before that?

A. I don't know exactly that it had shut down at all.

Q. 12. You understood they had shut down long after that time?

A. I don't know how long.

578 Q. 13. But you fix the dates on the 11th and 12th?.

A. Yes sir.

Q. 14. As a matter of fact somebody has told you to swear that?

A. No sir, they never told me about it, I had a crop and I went to Mr. Quintrell after that and suggested plowing up the corn and planting it again.

Q. 15. Do you know what day you planted your crop?

A. The 26th day of April.

Q. 16. How do you know that?

A. I know because I was going to work it over.

Q. 17. On what day did you work it over?

A. I commenced working on it along that week, about the 13th or 15th.

Q. 18. On what day did you give it the first working?

A. That is the day, in May.

Q. 19. You planted it the 26th day of April?

A. Yes sir.

Q. 20. And you was going to work it two or three days after this?

A. No sir.

Q. 21. Did you set down in a column when you were going to work it?

A. No sir.

Q. 22. Did you set down when you planted it?

A. I generally know when I plant anything.

Q. 23. When did you plant your potatoes?

A. I planted them along the first of April or the last of March.

Q. 24. What date?

A. I couldn't say exactly what date. I planted it the first days of April.

Q. 25. I am talking about the potatoes this year, the ones that got killed, when did you plant them?

A. Along the first of April.

Q. 26. What day in April?

A. I couldn't say just what day.

Q. 27. Why is it you cannot remember what day you planted your potatoes when you can remember when you planted your corn?

A. I know just when I planted it, because I made a calculation when I was going to work it over.

Q. 28. You made your calculations that you were going to work it on the 13th day of May?

579 A. About that time, I had to hire a good deal of work.

Q. 29. Why did you fix that particular day to work your corn before you planted it?

A. I didn't fix exactly that day.

Q. 30. Do you always plow your corn over, and plant it on the same day?

A. No sir, not every time.

Q. 31. When did you plow it the third time?

A. Three weeks after that, I plowed it every three weeks.
Q. 32. How many times did you plow it?
A. Three times.
Q. 33. Well, now coming to these potatoes killed in 1914, I believe you say you planted them about the first of April?
A. Yes sir.
Q. 34. And they were killed about what day in June—8th 9th or 10th of June?
A. About then, one patch was bit then.
Q. 35. Bit pretty badly?
A. Yes sir, pretty bad.
Q. 36. That was what day in June?
A. It was,—on,—when they got bit?
Q. 37. Yes sir.
A. July 3rd.
Q. 38. You swore a while ago they got bit the 8th and 9th of June?
A. They were bit some.
Q. 39. How did you happen to remember that date?
A. I made a report.
Q. 40. What for?
A. Damage.
Q. 41. You didn't ask for damage for those po*at*toes in June, they were not bit much in June?
A. I made out a report anyhow.
Q. 42. How much did you claim damage in June?
A. I don't remember just how much I did put in.
Q. 43. You remember the date, now why can't you remember how much you claimed damage?
A. I put in for several years, for corn, peas, tomatoes and potatoes.
Q. 44. And they were all bit in June?
A. Some were bit in June and some in July.
Q. 45. I am talking about this June biting, how much was the total damages you claimed?
580 A. Fifteen dollars I believe.
Q. 46. You can't tell how much was for potatoes and how much was for beans?
A. I think I did.
Q. 47. Have they allowed it yet?
A. I couldn't *v* tell you.
Q. 48. Have they been there to look at it?
A. Yes sir.
Q. 49. Have you put in any claim for damages in July?
A. Not yet.
Q. 50. You are going to?
A. I am not going to put in any more.
Q. 51. Not going to claim any damages for July, but are claiming damages for June?
A. I claim I was damaged in June and I claim I was damaged in July

Q. 52. But you are not going to put any claim in for July?
A. I let my time run out.
Q. 53. What did you let your time run out for?
A. I neglected it.
Q. 54. Didn't you pay enough attention to it to remember it within fifteen days?
A. Yes sir, I could have if I had wanted to.
Q. 55. You just didn't want to. Do you live on adjoining farm to Chastain?
A. No sir.
Q. 56. How far do you live from him the man that had the bumper crop of corn?
A. I couldn't say how far, we both live in the corporation.
Q. 57. About how far?
A. About half a mile.
Q. 58. Now, you spoke about having some things scorched on Quintrell's place?
A. Yes sir, J. P. Quintreel, or Joe Quintrell.
Q. 59. That scorching took place in May last year?
A. 1913, in May.
Q. 60. Did you put in anything for that?
A. No sir.
Q. 61. The only thing you ever put anything in for is damage that occurred in June this year, is that right?
A. No, I put in in full, peas beans and corn, I replanted
Q. 62. Was that last fall?
A. Yes sir.
Q. 63. How much damage did you claim then?
A. I think about thirty or thirty five dollars.
581 Q. 64. How much did they pay you?
A. Thirty or thirty-five dollars.
Q. 65. You got it all?
A. Yes sir.
Q. 66. They allowed you everything you put in for?
A. Yes sir.
Q. 67. Everybody else must have been paid off?
A. I don't know whether they were or not.
Q. 68. How close do you live from Willis Gillen?
A. Four miles.
Q. 69. Did you notice anything about his crops?
A. No sir.
Q. 70. Did you notice any crops he had at all?
A. No sir.
Q. 71. You cannot see good crops?
A. I have not been up that road.

(This witness traveled twenty miles in coming to Blue Ridge and return home.)

FRANK SHIPPEN, recalled for further cross examination testified as follows:

By General FOWLER:

Q. 1. Is this a copy of the agreement which you mention as having been entered into between the Tennessee Copper Company and the Shippen Bros. Lumber Company?
A. It is.
Q. 2. Please file that as exhibit No. 1 to your cross examination.
A. I do so.

Mr. HILL: We except to all of the questions and answers as to any agreement entered into between the Shippen Bros. Lumber Co. and the Tennessee Copper Company, because immaterial and irrelevant to the issues involved in this case, and further upon the ground that the same is incompetent, immaterial and irrelevant for the reason that the same is evidence on behalf of the defendant, and under the order of this court, the time for the taking of
582 evidence by the defendant has *fired;* further, because the document sought to be introduced is not complete within itself, but refers to another document as a part thereof, and for this reason is incompetent, immaterial and irrelevant.

The next witness, W. H. CARVER, having first been duly swo-n, testified as follows:

Direct examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. How old are you?
A. Forty eight years old.
Q. 2. Where do you live?
A. I line in Fannin County.
Q. 3. Whereabouts?
A. Near Medola, Georgia, in the northwest part of Fannin County.
Q. 4. About how far from the plant of the Ducktown Copper Company?
A. I would suppose about six miles from the Tennessee Copper Company and something like eight miles from the Ducktown Copper Company.
Q. 5. Did you ever hold any official position in this County?
A. Yes sir.
Q. 6. What was that?
A. Tax Receiver.
Q. 7. How long?
A. Four years, two terms.
Q. 8. Mr. Carver, have you ever been around the Ducktown Copper Company's plant and the Tennessee Copper Company's plant?
A. Well, not very much of late years.
Q. 9. I mean have you ever been there where you could see and smell the smoke?
A. Yes sir.

Q. 10. Have you ever seen any smoke around in your section of the County?

A. Yes sir.

Q. 11. Did you smell it?

A. Yes sir.

583 Q. 12. State whether or not is the same and has the same appearance and odor as the smoke you saw and smelled around the plants?

A. Yes sir, the same smoke coming from the plants, I have been there enough to know that.

Q. 13. Have you seen it this year?

A. Yes sir.

Q. 14. How often?

A. I have been seeing it pretty often, I don't know just how often.

Q. 15. How does this year compare with previous years?

A. It has been worse this year than common, been worse at my place than it has been since I have lived there, sixteen years.

Q. 16. Have you noticed it on any particular day?

A. Yes sir.

Q. 17. Just what day was that?

A. The 3rd of July.

Q. 18. How do you remember that date?

A. Well, my folks were preparing to go to a picnic on the 4th of July, they were in the kitchen cooking for that purpose, and a neighbor of mine was setting on the porch and we saw the smoke from the plants and made mention of it on that day.

Q. 19. Have you ever examined the timber and crops a short time after you have seen the smoke in there?

A. Yes sir.

Q. 20. What would be its condition?

A. It would be scorched up, as a general rule when the smoke is strong.

Q. 21. Did it have any effect on anything around your house on the 3rd of July?

A. Not at my house, the smoke was very little there at my house, it was going around that mountain, struck across going around in here (indicating) it didn't reach up to my house much.

Q. 22. Has it ever affected anything of yours?

A. Yes sir.

Q. 23. What?

A. My potatoes and beans and corn, most everything.

Q. 24. How would it do that?

A. Brown them up, ruined my potatoes this year.

Q. 25. Have you noticed the forests and timber?

A. Yes sir, dead timber around there. It is dead.

Q. 26. What is the condition of things now, generally, as compared with five or six or seven years ago?

584 A. They are a little worse right in there than they was then.

Q. 27. Have you ever been on any of those high mountains around your house?

A. Yes sir.
Q. 28. Have you ever seen the smoke coming over there?
A. Yes sir.
Q. 29. From what plant?
A. I have seen it from both.
Q. 30. Have you ever seen it coming from the Ducktown Copper Company's plant?
A. Yes sir.
Q. 31. Where was it going to?
A. Coming over in Georgia.

Cross-examination.

By COUNSEL FOR DEFENDANTS:

Q. 1. How was the smoke last year?
A. Well, not so bad last year as this, hardly any timber affected about my place last year.
Q. 2. During all of last year, not so much?
A. Not so much, but nothing like it was this year.
Q. 3. How was it year before last, 1912?
A. Well, about equal to last year.
Q. 4. That is very little timber affected in 1912?
A. Not right in there at my place, not but very little.
Q. 5. How was it in 1911?
A. It wasn't so very bad.
Q. 6. How was it in 1910?
A. It was pretty bad.
Q. 7. In 1909?
A. It was bad in 1909.
Q. 8. How was it in 1908?
A. My recollection is it wasn't quite so bad.
Q. 9. How was it in 1907?
A. I don't remember about 1907.
Q. 10. As a matter of fact along about then was when it commenced to get bad?
A. In 1907,——
Q. 11. In 1906 and 1907 was the years it commenced to get bad?
A. My recollection is it commenced to kill stuff there about that time.
Q. 12. About 1906 or 1907?
A. That is my recollection.
585 Q. 13. Then it was pretty bad for some years, and you say in 1911, 1912 and 1913 it didn't affect the timber so much?
A. It wasn't so bad in 1911-12 and '13.
Q. 14. But this year it was worse than during those three years?
A. Yes sir, as bad as it was in 1910, anyway, and 1909 and I believe it is a little worse than then. I know it hurt our crops worse than then.
Q. 15. You live at Medola?

A. Yes sir, about two miles.
Q. 16. That is further away from the furnaces than Epworth?
A. Yes sir.
Q. 17. About how much further?
A. I hardly know, I live west of Epworth.
Q. 18. Were you a witness down at Chattanooga?
A. Yes sir.
Q. 19. In December?
A. Yes sir, last December.
Q. 20. The time the case was tried there before a jury?
A. Yes sir.
Q. 21. You testified in the case at that time?
A. Yes sir.
Q. 22. Of course, you didn't testify the same as you have here because things have happened since?
A. I didn't testify about things in this year.
Q. 23. You had a very bad drought this spring and summer?
A. Had a reasonably dry summer.
Q. 24. Didn't you have a drought of six weeks, up until after the first of July?
A. No, we wasn't six weeks without rain.
Q. 25. You had a very dry summer up until the 5th of 6th of July anyway, somewhere there?
A. Yes sir, it was pretty dry.

Redirect examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. Are you generally familiar with conditions around there?
A. Yes sir recently.
Q. 2. That is why you testified as a witness for Mr. Vestal?
A. Yes sir.
Q. 3. Did you or not notice your son-in-law's garden about then 3rd of July or immediately after that?
A. Yes sir.
586 Q. 4. How about that? And when was it?
A. On the 5th of July. His potatoes were scorched up and the rag weeds were scorched too.

Recross-examination.

By COUNSEL FOR DEFENDANT:

Q. 1. You don't mean they were scorched on that day, you mean they had been?
A. On the 3rd, he said.

By COUNSEL FOR DEFENDANT: I ask that that be taken out.

Q. 2. You saw his potatoes on the 5th of July?
A. Yes sir.
Q. 3. They were then scorched?
A. Yes sir.

Q. 4. They were scorched?
A. Yes sir.

Re-redirect examination.

By COUNSEL FOR PLAINTIFF:

Q. 1. Did you see the smoke there on the 3rd of July?
A. Yes sir.

Re-recross-examination.

By COUNSEL FOR DEFENDANT:

Q. 1. You saw smoke there through the whole spring?
A. Yes sir.
Q. 2. All of May, June and July?
A. Yes sir.
Q. 3. And at different times in June?
A. Yes sir, more than one day.

This witness traveled twenty-four miles in coming to Blue Ridge and returning home.

587 In the Supreme Court of the United States.

No. 1. Original.

In Equity.

THE STATE OF GEORGIA, Plaintiff,
vs.
TENNESSEE COPPER COMPANY and DUCKTOWN SULPHUR, COPPER & IRON COMPANY, LIMITED, Defendants.

STATE OF GEORGIA,
Hall County:

GAINESVILLE, GEORGIA, September 10th, 1914.

I, E. B. Kingsbery, the commissioner agreed on by counsel for complainant and the Ducktown Sulphur, Copper & Iron Company, Limited, do hereby certify that the foregoing depositions as contained on pages 1 to 749 inclusive, were taken before me under the consent appearing on page No. 1 hereof, dated July 8th, 1914, and that the witnesses whose names appear in this record were first duly sworn; I further certify that I correctly took down the statements and the evidence of the various witnesses in shorthand and that I have correctly transcribed the same into typewriting from my notes, and I now, in compliance with the consent signed by counsel as aforesaid, and also the consent signed by counsel as appears on page No. 2 of this record, express the record of the testimony of the various witnesses together with the exhibits to said testimony, same being sent from Gainesville, Georgia, to the Clerk of the Supreme Court of the United States at Washington, D. C.

E. P. KINGSBERY,
Court Reporter and Commissioner.

588 STATE OF GEORGIA,
Hall County:

GAINESVILLE, GEORGIA, Sept. 7, 1914.

I, E. P. Kingsbery, commissioner, before whom the foregoing depositions were taken, do hereby certify that the testimony of the foregoing witnesses was taken down by me in shorthand, and transcribed into longhand, or typewriting accurately and correctly, to the best of my skill and ability.

____ ____,
Commissioner.

589 No. 1. In Equity.

THE STATE OF GEORGIA, Plaintiff,
v.
THE TENNESSEE COPPER COMPANY and THE DUCKTOWN SULPHUR, COPPER & IRON COMPANY, LTD., Defendants.

Deposition of R. A. Shifflett, taken by agreement between counsel for plaintiff and defendants at Blue Ridge, Georgia, upon adjournment of hearing at Knoxville, Tennessee, in behalf of the defendant, the Ducktown Sulphur, Copper & Iron Company, in the presence of J. A. Drake and Lamar Hill representing the State of Georgia and J. A. Fowler and Geo. H. Hyatt representing the defendant.

R. A. SHIFLETT being sworn to speak the truth, the whole truth and nothing but the truth, testified as follows:

Direct examination.

By J. A. FOWLER:

Q. 1. What is your age, Mr. Shiflett?
A. 52 years.
Q. 2. Where is your residence?
A. Harriman, Tenn. at present.
Q. 3. Have you ever held any official position in Tennessee; if so what?
A. Yes sir, I was chief mine inspector for the State for twelve years.
Q. 4. Under what Governor?
A. Governors McMillan, Frasier and Patterson.
Q. 5. Who appoints mine inspectors in Tennessee?
A. The Governor of the State.
Q. 6. What was your occupation before you became Chief Mine Inspector?
A. Civil and Mining Engineer.
Q. 7. State whether or not you have ever been called upon to inspect large bodies of timber lands?
A. Yes sir. Let me amend my reply to the previous question.

Civil, Mining and Consulting Engineer. A great many in connection with my work in mining development.

590 Q. 8. About when did you first perform service of that kind?

A. I began engineering and surveying when I was seventeen years old, and I have been at it continuously, with probably one or two years' exception. I believe.

Q. 9. I believe that for a time you were a railroad civil engineer?

A. Yes. I am also employed as consulting engineer to examine and report on mining properties and timber properties.

Q. 10. Before you were appointed mine inspector did you or not examine bodies of timber?

A. Yes sir.

Q. 11. What bodies or large tracts of land did you examine before you became mine inspector?

A. In Tennessee?

Q. 12. Anywhere?

A. I examined in my own State, Virginia, large tracts of timber land before I came to Tennessee and located, and in Tennessee after coming to Tennessee, and I examined large timber and coal properties in Knox, Ball and Harlan counties, Kentucky; Whitley County, Kentucky, Anderson County, Tennessee, Campbell County, Tennessee, Claiborne, Fentress, Overton County, Tennessee, White County, Marion County, Tennessee, and numbers of others, I don't recall right now.

Q. 13. What were the purposes of that examination?

A. Some of them for corporations and some of them for companies that were preparing to invest in mining and timber properties to ascertain the value of the property, and whether valuable for mining and timber properties.

Q. 14. Did or not such examinations require and inspection of the timber for the purpose of determining its condition and the amount of timber standing upon the land?

A. Yes sir.

Q. 15. About what year did you make these first inspections?

A. Kentucky or Tennessee?

Q. 16. Anywhere?

A. I have been doing that work ever since I was seventeen years old; I don't hardly know how to answer that, unless I could go back and take up the latter part of my work in Tennessee.

Q. 17. State whether or not you have been examining mining lands for the last thirty years?

A. Yes sir.

591 Q. 18. While you were mine inspector in Tennessee, did you or not make examinations of timber lands from time to time?

A. Yes sir.

Q. 19 Since you went out of office, has or not, the examination of lands been to some extent a specialty of yours?

A. Altogether. My work now is altogether specialty work; that

is the examination and reporting on coal and timber properties; opening up mining properties and as consulting engineer for different companies.

Q. 20. Have you or not done any work of that kind for the Ducktown Sulphur, Copper & Iron Company?

A. Yes sir, I have done considerable inspection work of timber lands for the Ducktown Sulphur, Copper & Iron Company.

Q. 21. When did you first work for that company?

A. (Referring to memorandum book:) I think the first work I did for the Ducktown Sulphur, Copper & Iron Company was in 1909, as well as I recollect.

Q. What was the nature of that work?

A. To go over various tracts of timber in different parts of the country, making a thorough and close examination of the timber as to the character and quality and as to the number of dead trees and the cause of the death of a good deal of timber.

Q. 22. Do you know why they employed you to make that inspection?

A. I think they employed me on account of the fact that I had already made a report of the Ducktown basin in 1898, 1899 and 1900, and I think I was employed from that work.

Q. 23. Was that report which you mention made while you were State Mine Inspector?

A. No, that was made before I was appointed State Mine Inspector. I made that report for some French people it was not completed until 1900.

Q. 24. Why were these French people employing you to make inspection of that Ducktown basin?

Mr. DRAKE: I except to the question as irrelevant. Exception overruled; appeal prayed and granted.

A. I think they were figuring on investing in there.

Q. Did you make inspection of that whole section at their instance?

592 A. As much of it as they wanted done. The work in 1898 was practically confined to the basin; that is my work.

Q. 26. Did that relate wholly or nearly wholly to the mineral resources of the basin?

A. To the mineral resources and also the effects of the smoke on the timber around on the slopes of the mountains, and — 1899 I went outside of the basin; I was out a little further I think, as well as I recollect now, I went over to look at some specimens of — taken from the mine on the South of the Ocowee River, Mine No. 20, and in 1900 I was a little further out from the plants than I ever had been before except in going through; I think at that time I spent a great deal of time in Fannin and Cherokee Counties North Carolina, as well as I recollect now.

Q. 27. Going back to your employment in 1909 by the Ducktown Company, do you know whether or not at that time they had on hand a number of smoke suits.

A. I think so.

Q. Do you know whether or not you were employed in consequence of these cases pending in the courts?

A. Yes sir.

Q. 28. In the mean time between your examination of that section of the country in 1898, 1899 and some later, and your inspection in 1909, had you been through that section?

A. Yes sir, frequently.

Q. 29. Were you through these about the time the Tennessee Copper Company built that high stack, and a while after that?

A. Yes sir, I was in the basin a number of times during 1900, 1901, 1902, 1903, 1904 and 1905, 1906, 1907 and well on until 1914 you might say, as when I was employed as Chief Mine Inspector I was in the basin from two to three times a year; sometimes oftener.

Q. 30. That was for the purpose of inspecting the mine?

A. Yes sir.

Q. 31. Were you through any part of North Georgia just after the construction of that high stack by the Tennessee Company?

A. Yes sir.

Q. *31.* Did you observe the effect of that high stack in disseminating the sulphur fumes, and the effect it had upon the vegetation in North Georgia?

593 A. Yes sir, South of the river I did; it was more noticeable there than anywhere else.

Q. 32. What was the result of the construction of that high stack?

A. It sent the fumes further away; that is a greater distance from the plant.

Q. 33. Now, I wish you would state the extent of your investigations made in 1909 for the Ducktown Company?

A. Without going back to my notes, I can give it to you fairly well.

Q. *34.* I covered all of the basin during that year in my first inspection for the Ducktown Company, and a good deal of the North Georgia territory, Cherokee County North Carolina and a good deal of Polk County, Tennessee, a considerable distance near and a considerable distance away from the plant.

Q. 35. Were you requested to make special investigation of some particular tracts?

A. Yes sir.

Q. 36. Do you remember whose tracts you were specially looking for at that time?

A. in 1909?

Q. 37. Yes.

A. No sir, I don't recall; I could give you my route.

Q. 38. I wish you would state the route you took?

A. Eastwardly from the basin into Cherokee County, North Carolina, a part of North Georgia, and through Gravy Hughes gap to and through all the gaps on the East of the basin, Jellico, let me see Panburry gap, East, Northeast, I went on Little Frog mountain and West of the Little Frog, South of the Ocowee river across and

over the river into Georgia around Pearceville and I should say seven to ten miles from there near the plant, South at that time, in Georgia and Southwest.

Q. 39. Do you remember how much time you spent in the State of Georgia while making that inspection?

A. No sir, I couldn't. I have the number of days I spent in Georgia.

Q. 40. How long did you spend on the whole trip?

A. Twelve days in 1901; eight days in 1902; 10 days in 1903; twelve days in 1904; nine days in 1905; seven days in 1906; eight days in 1907; six days in 1908; four days in 1909; twelve
594 days in 1909 again; eight days in 1909 again; four days in 1910; eighteen days, that is there were two inspection trips in 1912, fourteen days in 1912; six days in 1913; eight days in 1914, fifteen days in 1914 again, and twenty-two days. I don't know what the total is I haven't run it up. These trip- were confined to Polk County, Tennessee, Fannin, Gilmer and Murray Counties, Georgia, Cherokee County, North Carolina; Mitchell and Yancey County in North Carolina; Roane, Overton, Morgan, Fentress Counties in Tennessee. All of these mountain Counties in East Tennessee; all that work was in 1914; that is for the D. S. C. & I. Company.

Q. 41. The days you have mentioned, do they constitute the entire time you have worked making timber inspections at the instance of the Ducktown Company.

A. Yes sir, that is for the Ducktown Sulphur, Copper & Iron Co.

Q. 42. It embraces the inspections you made in other States as well as in Georgia?

A. Yes sir.

Q. 43. When you were first employed by the Ducktown Company in 1909, do the dates mentioned previous to that time, cover the time that was spent in working for some other companies besides the Ducktown Company?

A. Yes sir.

Q. —. Mr. Shiflett, I wish you would state how carefully you inspected lands in North Georgia in 1909.

A. As far as my work in my inspections; they were very thorough and close.

Q. 44. What did you specially observe?

A. It was the timber of course, and the effects of the smoke near the furnaces at that time to the vegetation; the character of the timber; the dead timber, and the condition of the timber generally.

Q. 45. What time of the year was it?

A. I begun in July, I believe in 1909. Yes sir, July, 1909.

Q. 46. The entire inspection was made in that month, was it?

A. Yes sir. Just wait a minute. (Refers to book) Yes sir.

595 Q. 47. What is generally the condition of the foliage of the trees and vegetation in June in North Georgia, and during the month of July?

A. On healthy timber the foliage would be green. In some years

we have had a frost that would injure the *the* timber in May, and June, but I didn't see any evidence of it that year.

Q. 48. What was the condition of the foliage on the timber and the bushes and the vegetation in June while you were on that trip?

A. Outside of the basin it was practically all green. I saw very little effect from the smoke outside of the basin, that is, any distance except South of the Ocowee river and at Fighting Town creek.

Q. 49. I am asking you specially about 1909, I want to take that up separately?

A. At that time the smoke limit had been practically fixed. I located that on the first map I filed in the case and I think I could do it again for you.

Q. —. Did the damages from the smoke, in 1909, extend down into North Georgia?

A. A little, yes sir.

Q. 51. At what points?

A. Down to Epworth and the L. & N. Railroad.

Q. 52. About how large a section did it cover?

A. It was very small; I can't tell just how much, but it was very slight.

Q. 53. Do you know to whose lands these damages were on?

A. At that time I wouldn't except from my guide. When we come into Georgia on that trip we wasn't familiar with the property owners unless we inquired and found out that way.

Q. 54. How far was that from the furnaces?

A. At that time I should say the limit as fixed was about six miles from Ducktown.

Q. 55. How far from the Tennessee plant?

A. About half that distance; about three miles from the Tennessee Copper Company's plant.

Q. 56. Was that the only place you observed damages in Georgia on that trip in 1909?

A. I think so.

Q. 57. Do you know when the two companies, I mean the Ducktown Company, and the Tennessee Copper Company installed their acid plants?

596 A. Let's see, I believe they installed the pyritic system—I have this memorandum here of it. The Pittsburg Copper Company began roasting ore in the open hearth in 1894 and discontinued operations in 1898; part of that is a matter of record. In 1898 the mine known as the D. S. C. & I. Co. began open roasting, and *and* discontinued the open hearth process in 1902 and begun the pyritic process, and the manufacture of sulphuric acid in 1909. The plant was put into operation, as well as I remember, in the early spring; I was there; I don't remember the month of 1909. The Tennessee Copper Company begun roasting ore in 1901, and discontinued that process in 1904; they begun the pyritic system in 1904; the latter part of 1904 or 1905, I have forgotten which.

Mr. DRAKE: I want to enter an exception to all this evidence as having been gone into in the former investigation.

Exception overruled; appeal prayed and granted.

They begun to manufacture acid in 1908 and built their high stack in 1906.

Q. 58. Were you or not Chief Mine Inspector when they put in that high stack?

A. Yes sir; I get this data from my old notes.

Q. 59. When did you make your next inspection of timber through North Georgia?

A. In 1912.

Q. 60. In what month?

A. I think that we begun on the 26th day of September, in 1912.

Q. 61. What was the condition of the foliage at that time; that is was it injured or not?

A. No sir, the condition was all right.

Q. 62. What was the extent of your examination at that time?

A. On that inspection I went over a large territory in North Georgia, in Fannin County, I believe; we went into Fannin, Murray and Gilmer on that trip, I believe; I am not sure however, as to that. Wait just a minute please, I don't want to give you that without referring to my notes (Refers to book) Most of that work was on the Shippen and Vestle property. Of course we went over a
597 great deal of property but our inspection was supposed to cover the Shippen and Vestle lands, as I now recall.

Q. 63. Can you give an estimate of about what sized territory you covered on that inspection?

A. Not without going back to the map, but it was quite an area; we went over a great deal of country.

Q. 64. About how many acres at a guess?

A. I wouldn't want to guess at it; I could give it to you pretty well by the map.

Q. 65. You inspected all of the Vestle lands, did you?

A. All that we knew of.

Q. 66. I wish you would tell in a general way just what localities you visited?

A. Along the head of the Cumberland creek and the territory East of Jack river and West of Jack river as far South as Cherry-Log station down here; that's as far East, I think, that we went on that trip.

Q. 67. Do you know whether or not there was at that time a law suit pending between the Vestle Company and the Ducktown Company?

A. Yes sir.

Q. 68. Were you a witness in that suit?

A. Yes sir.

Q. 69. State whether or not it was for that purpose largely that you made the inspection?

A. Yes sir.

Q. 70. State whether or not you have present a map which shows the various sections of land in Fannin and Gilmer Counties, Georgia, and parts of adjoining counties; and also Polk County, Tennessee?

A. Yes sir, this blue print shows the lands in Polk County, Tennessee; Murray, Fannin, Union and Towns in Georgia, and the prop-

erties of G. E. Wetmore, Paul F. Stephens, J. P. Vestle, J. H. Vestle, Jim Brooks, Tasker, Shippen Bros. and J. H. Ladew; this map, however, does not show all of these properties colored, and before this map is filed, I would like to have the opportunity of coloring these different properties; I wouldn't like to file it as it is.

Q. 71. Whose lands are in colors on the map at present?

A. Those mostly of Shippen Bros are in colors.

Q. 72. Shippen Bros. are here in Georgia, whose are in Tennesee?

598 A. Wetmore and Stephenson.

Q. 73. You haven't located and colored the Vestle lands in Georgia?

—. No sir.

Q. 74. Will you put on the Vestle properties in a bright red and file this map as Exhibit "A" to this deposition?

A. Yes sir.

Q. 75. Will you also put in different colors the lands belonging to the other parties you have named, which are not now shown?

A. Yes sir.

Q. 76. You say that in 1912 you were making a special investigation of the Vestle lands?

A. Yes sir.

Q. 77. What portions of those lands did you go over?

A. We went over most of the Vestle property; all that we knew any thing about with the exception of one or two lots.

Q. 78. Who was your guide and gave you information as to the owner of any special lands?

A. Mr. Higdon was one of our guides, and Sherman Reese who we thought was familiar with the property was also one of the guides, and we had a surveyor from Georgia down here, I have forgotten his name. Oh yes, Mr. Clayton, the surveyor from Gilmer Count, Georgia.

Q. 79. Did you, on that trip, go over any part of Mr. Shippen's land?

A. I think we went over every body's land on that trip.

Q. —. How far South did you go—how far South of the Tennessee line?

A. I don't recall how far South we went. We went as far South as Cherry Log from the Tennessee State line. I could take the Government map and give the distance, if you will take that for it.

Q. 80. Did you inspect all of the lands between Cherry Log and the Tennessee State line?

A. We did; that was our purpose.

Q. 81. I wish you would state what evidence of smoke damage you observed on that trip?

A. I didn't see any outside of the smoke limit; that was all fixed in 1909; it extended very little further in any direction except the lower gaps until the- built the high stack, and then it got a little further South.

Q. 82. That was built in 1906, wasn't it?

A. The latter part of 1905 or 1906; I am giving that data
599 from my records while I was Chief Mine Inspector.

Q. 83. What you mean is the original limit that it extended over into Georgia?

A. Yes sir.

Q. 84. How far into Georgia?

A. I would say not over six miles in any direction from the D. S. C. & I. Company's plant and not as far as that in Tennessee.

Q. 85. How far is the Tennessee plant from the Georgia line?

A. I can't say exactly how far it is. The scale of the Government map shows that it is about three-quarters of a mile.

Q. 86. How far is it from the Ducktown Company's plant to the State line?

A. Taking the Government map for it, it is practically over three miles; about three and nearly a half miles from that to the State line.

Q. 87. In 1912, did you inspect that territory in there which was affected by smoke after the construction of the high stack in 1906?

A. I made the inspection in there in 1912 for the D. S. C. & I. Company, and I was in there previous to that for other parties.

Q. 88. What was the condition of the foliage within that section which had not been previously affected; that part of it in Georgia?

A. There was very little change in it sir; the foliage was green except in a few places where I could see the effects of the smoke coming South, in the low places.

Q. 89. That was in 1912?

A. Yes sir, in 1912, and I was in there in 1910, but not for the D. S. C. & I. Company.

Q. 90. Who others at that time?

A. For some capitalists.

Q. 91. Prospective buyers in that section?

A. Yes sir.

Q. 92. I wish you would explain in detail just where you noticed any visible effects from the smoke in the State of Georgia in 1912, and how close it was to the Tennessee line?

A. In one or two places,—this is approximate now, or an estimate rather, it was, as well as I recall, four or five miles from
600 the river; that would make it, I don't know how far from the Tennessee line.

Q. 93. Please describe the extent of the damage as you observed it at that time?

A. Very slight and the timber that was affected was very scrubby and of no value.

Q. —. How much territory did it cover?

A. Very little; I can't say how much; just in the low gaps around.

Q. 95. Was that on any of the Vestle lands?

A. No sir, I think not.

Q. 96. Was there on the Shippen land, as far as you know?

A. I don't know; there might have been.

Q. 97. What was the character of the timber that was affected?

A. It was very scrubby small timber; there wasn't any merchantable timber affected.

Q. 98. Was the timber absolutely killed or burnt up?

A. No, it was burnt or blackened. I don't think it all occurred at one time. From my ob-ervation on that property it had been in there at different times; at different times the smoke would come in there; there is a difference in the discoloration.

Q. 99. About how many acres do you suppose that you observed that was affected in that way?

A. The area was so small I wouldn't hardly know how to estimate; the area there was very small.

Q. 100. Five acres?

A. I shouldn't think so; I don't believe it would altogether.

Q. 101. How far was that from the Tennessee Copper Company's high stack?

A. I should say about three miles.

Q. 102. How far from the Ducktown stack?

A. About six miles; probably more than three miles from the Tennessee Copper Company's stack.

Q. 103. That was in September, 1912?

A. Yes sir.

Q. 104. When did you make your next inspection for the purpose of ascertaining smoke damage in there?

A. 1913.

Q. 105. What month?

A. I think we begun work on the Vestle lands, as well as I remember, on that trip, on September 9th.

601 Q. 106. How long were you in making the inspection?

A. I think we were fourteen days on that inspection and six days on another inspection, fourteen days in September and in October six days.

Q. 107. How much territory did you cover in September, in North Georgia.

A. I didn't cover a great deal of territory in September 1913. I wasn't very well at the time; wasn't strong enough to go over the territory. I had already been out there before that, and as well as I recall now, and also by referring to my notes, I think the most of my work was with Mr. Chestnut as my guide. He lives on Jack's river and our camp was stationed at that time on Jack river near his farm; that was in Fannin County.

Q. 108. Were you on the Vestle lands at that time, or what lands did you inspect?

A. I wasn't over the Vestle property at that time. I had been over that before.

Q. 109. In previous years?

A. Yes sir. My work then was more to ascertain and make a close examination of the timber, but more to get the condition of the timber than to go over a big area which we did by not having to go a great distance from the camp.

Q. 110. Did you observe any indications of smoke damage during that year or not, in North Georgia?

A. No sir, there never was any smoke from the furnaces in that county.

Q. —. How far were you from the furnaces?

A. (Referring to Map) On an air line about 10¼ miles from the Tennessee Copper Company and practically thirteen miles from the D. S. C. & I. plant. Of course that was our camp, and we worked from our camp a greater distance from the furnaces in there.

Q. 111. What were you doing there in November and December?

A. I wasn't there in November and December.

Q. 112. I thought you said you were?

A. Let me see (refers to memorandum book); I was there Mr. Fowler in October and in November.

Q. 113. Why did you go back there in October and November?

A. To make a very close and thorough examination of the
602 condition of the timber.

Q. 114. What territory did you cover then?

A. I had just gone over that territory, the territory I have you a moment ago near Jack river. I didn't go over the Vestle property that trip, I had ben over it before that.

Q. 115. Did you see any evidence of smoke damage on that trip?

A. No sir. There never has been any smoke in there; smoke can't get there very well.

Q. 116. When did you make your next investigation in Georgia, or was that the last?

A. I think that it is. I don't think I have ever made investigation since that in Georgia, in fact I know I haven't. I have made other investigations, but not in Georgia.

Q. 117. State or not, Mr. Shiflett, you have traveled through a number of counties in Tennesee and some in Kentucky and examined timbers located there and growing there for the purpose of making comparison of the growth of the timber and the condition of the timber in North Georgia and timber in these other sections?

A. Yes sir, I have done that to make comparisons. I have done a great deal of that for corporations and prospective purchasers or parties wanting to sell property.

Q. 118. State whether or not in making these examinations for parties who contemplated making purchases, one of the things especially required of you was to observe the amount of dead timber and diseased timber, and the general condition of the timber?

A. Yes sir, the character and quality of the timber and the condition of the forests.

Q. 119. Did you or not make a trip through a number of counties in Tennessee at the instance of the Ducktown Company?

A. Yes sir.

Q. 120. When was that?

A. February, I think, and March, 1914.

Q. 121. Several persons went along with you?

A. Yes sir.

Q. 122. That the trip Mr. Reese accompanied you?

A. Yes sir and Professor Bain, Mr. Miller and two or three others; I have forgotten some of them, who they were.

603 Q. 123. I wish that you would describe the condition of the timber in North Georgia within the region within which it is claimed that the timber and other vegetation is damaged by this copper plant at Ducktown?

Mr. DRAKE: I except to the question because the witness has not stated that he has examined all of the affected territory in Georgia, and therefore cannot speak with reference to all the affected territory in Georgia. Exception overruled; appeal prayed and granted.

Q. 124. As you found it on the trips you made in 1912 and 1913?

A. Do you mean this inspection of the copper company land, or do you mean my work in other counties?

Q. 125. You made these trips in 1912 and 1913, what was the general condition of the timber at that time?

A. The timber in the mountain section of East Tennessee——

Q. 126. I am talking about in Georgia?

A. Considerable difference—a good deal of difference.

Q. 127. Describe the condition of the Georgia timber, as to the amount of dead timber and the appearance of the timber?

A. The conditions in the territory I have gone over here in Georgia are very much better than we have up in Tennessee; it is far better by a great deal; there is less dead timber than we have in the upper counties, timber that is hundreds of miles away from the furnaces; also in Kentucky and in North Carolina; the percentage of dead timber in the counties I have worked in in these states is far greater than the percentage of dead timber anywhere throughout this section. The percentage of dead timber in Yancey and Mitchell and Whitley counties in Kentucky than it is in the North Georgia section, but I think it is about the same in Harlan County Kentucky; in Harlan County Kentucky I think the percentage of dead timber is about the same as it is here.

Q. 128. Is that less than you found elsewhere in the mountain region of the South?

A. You mean these Georgia lots?

Q. 129. Yes?

A. Yes sir, it is a great deal less.

604 Q. 130. What about Harlan County, Kentucky?

A. In Harlan County, Kentucky, the percentage of dead timber will compare very closely with that here.

Q. 131. Is that less or more than elsewhere?

A. It's a great deal less than elsewhere.

Q. 132. Now taking the different varieties of timber, first take Hemlock, state whether or not there is much or little of that dead in these forests through which you have traveled?

A. There is a great deal of dead timber; it's been dying for a long time. I have been working in a number of counties in Tennessee for the past thirty years or more, and for the last twenty-five years the timber has been dying very rapidly, particularly the Chestnut.

Q. 133. I'm talking about Hemlock, we *got* get to the Chestnut after a while?

A. The dead Hemlock in that country is far greater than it is in this section. You will find, however, a body of Hemlock all right in East Tennessee counties; then again you will come across immense bodies of dead Hemlock.

Q. 134. In what counties in Tennessee, Kentucky and North Carolina have you observed or noticed the Hemlock dying?

A. In Morgan, Roane, Overton, Fentress, Cumberland, Scott, in Tennessee particularly.

Q. 135. How is the Hemlock in the Kentucky counties that you noticed?

A. Nearly all dead.

Q. 136. How about in the counties in North Carolina that you have gone through?

A. A great deal of it is dead; that is along the line of the railroads. When you get back into the country away from the railroad, I don't know how it is. We travel for miles and miles on the railroad and you see dead Hemlock just like you find it in East Tennessee.

Q. 137. Do you know enough about the diseases of timber to know or have an idea of the disease that is causing the Hemlock to die?

A. I think I know some of them.

Q. 138. What are they?

A. I think the Hemlock has a borer. The other dis-
605 eases or causes I don't know. I also think that we find Hemlock along on the creeks and on the mountain sides where they have had fires; that burns the leaves and leaves the surface unprotected and the heavy rains cause an erosion of the soil and leaves nothing to support a tree. Up in Morgan county just above Nemo there is a large section there where practically all the Hemlock is dead. The condition on back South of these points, not over three miles, we have a pretty fine body of Hemlock dying; insects get into it.

Q. 139. I wish you would describe the condition of the Hemlock in North Georgia, within the smoke zone?

A. You will find a good deal of Hemlock in Georgia in the smoke zone, and some out of the zone.

Q. 140. What is becoming of it?

A. Some of it has been cut down and manufactured into lumber and some of it is dying. It is dying now ten and fifteen miles away, very rapidly. Along on Jack river the Hemlock is dying.

Q. 141. Is it dying and more rapidly than it is in the counties in Tennessee?

A. No sir, not as much. Fire causes the destruction of timber, and I have seen evidences of fires; numerous fires.

Q. 142. Did you ever see any Hemlock dying on Jack river from Smoke fumes?

A. No sir. I never saw any dying from Smoke fumes on Jack river. I am as positive of that as I am that I am sitting here answering questions.

Q. 143. Did you ever seen any Hemlock die anywhere in North Georgia from the smoke fumes?

A. Yes sir. On the Ocowee river, down the river, I think it's along there at Patterson's ferry I have seen the effects of the *some* there.

Q. 144. The effect enough to kill the tree?

A. I think not, but I saw the effects of the smoke.

Q. 145. Are the points you mention here in Georgia, or not?

A. No sir, in Tennessee.

Q. 146. Did you see any evidence of Hemlock timber dying from smoke fumes in North Georgia?

A. No sir.

606 Q. 47. With reference to the Chestnut, I wish you would describe the condition of the Chestnut forests here through these various counties in Tennessee, North Carolina and Kentucky?

A. In Tennessee we haven't got any Chestnut; it is practically all gone; you will travel for days and days throughout the mountain sections of Tennessee and you won't hardly find a Chestnut tree; there is a good many on the ground but the Chestnut has been dying very rapidly in Tennessee for the last twenty-five years; I don't believe that you could get a bushel of Chestnuts in that whole section.

Q. 148. Have you any knowledge of why the Chestnut is dying?

A. I think, generally to the borer. I don't think the borer has reached this section yet. I find some live green healthy Crestnuts in Fannin County. I find more there than I do in all of the counties in East Tennessee that I have been through.

Q. 149. I wish you would describe the difference between the present condition of the Chestnut timber in North Georgia as compared with the other sections of the country through which you have traveled?

A. I find a good deal of good Chestnut timber in North Georgia. I find a lot of Chestnut standing. I have seen some fine bodies of young Chestnuts; as fine as I ever saw. I have seen hundreds of acres in that Jack river country over there, and on the East slope of the Cowpen Mountain, and down Cumberland creek and Jack river there is a fine body of young Chestnut in there that is healthy and vigorous. I didn't see any Chestnut in the country until I got in that section in there.

Q. 150. In your travels in 1912 and 1913, did you see any evidence of smoke damage to the Chestnut timber in North Georgia?

A. No sir.

Q. 151. Did you notice to see whether or not there was any young Chestnut growth in this original territory where the vegetation was damaged?

A. Yes sir, you will find a good deal of young Chestnut growing right up near the furnaces.

Q. 152. Have you observed whether or not there was any damage to that timber resulting from these fumes?

607 A. No sir, no damage to it when I went over it last.

Q. 153. What is the condition of the oak timber in the

several counties through which you traveled in the States of Kentucky and Tennessee?

A. There is not much good oak. Nearly all of the oak timber that — of any value has been taken out.

Q. 154. Been cut?

A. Yes sir.

Q. 155. Have you noticed any oak timber dead in this section?

A. It is dying. I don't know what is killing the oak trees, but a good deal of it is dying.

Q. 156. Is it dying in such quantities as the Hemlock and Chestnut?

A. No sir.

Q. 157. How about the oak timber in North Georgia?

A. I have seen more fine tracts of oak timber in North Georgia than I have anywhere. I will have to change my answer in regard to the last question, because in Polk County, Tennessee, I have seen some very fine white oak.

Mr. DRAKE: I *expect* to the answer as to seeing fine tract of oak timber in North Georgia, because we don't deny that there are some fine tract- of oak timber in North Georgia. Exception overruled. Appeal prayed and granted.

Q. 158. Whereabouts in Georgia did you see fine oak timber?

A. I think the best oak timber I recall seeing in North Georgia is across the mountain near Higdon's place up there Fighting Town creek; I don't recall whose land it's on, but I believe that's the best White Oak in North Georgia.

Q. 159. About how far from the Tennessee furnaces?

A. I should say ten or twelve miles; maybe more.

Q. 160. In your inspection in 1912 and 1913, did you ever observe any damage; any smoke damage to oak timber in any part of North Georgia?

A. Not outside the limit.

Q. 161. Did you see any damage by smoke to the timber at any place in this State?

608 A. No sir; this timber is nearly all cut over up there near the State Line.

Q. 162. Is there any timber near the State line in the State of Georgia in the vicinity of the copper furnaces still standing that is of any size?

A. No sir; not of any value; it has all been cut out.

Q. 163. What evidence do you see of its being cut?

A. You see the stumps and you don't find any trees; you will find log roads, and we know that there are the little mills that was in there cutting the timber.

Q. 164. What was the condition of the young foliage in there at the time you made these examinations; what was the condition of the young foliage and the underbrush, and the young trees that were growing in that locality?

A. The young trees where the soil was very fair were very vigorous; but about where they had had fires the underbrush showed the

effects of the fires, but the young trees that were coming on were very vigorous.

Q. 165. Did you or not refer to young trees in North Georgia near the State line?

A. Yes sir; also right West from the furnaces.

Q. 166. State from what causes the timber in North Georgia lying immediately South of the Tennessee line have been damager or has been damaged?

A. Nearly all of that has been cut over; there is very little good timber near the State line; as I said, nearly all of it has been cut over and a majority of it that is standing is scrubby small timber.

Q. 167. Naturally scrubby?

A. Yes sir, most of it is.

Q. 168. Where there is any timber of any size in North Georgia does it show any evidence of having been damaged by fire or any other causes?

A. The good timber?

Q. 170. The forests of North Georgia; is there any evidence of forest fire?

A. I don't remember. I have seen black smoke on the leaves along the mountain side South of the line and South of the furnaces, and between Higdon's store and the furnaces.

Q. 171. I am not speaking of damage from the furnaces, I am speaking about damages from forest fire?

609 A. You find that everywhere; not only in Georgia, but everywhere.

Q. 172. Do you find evidence of damage from fire in Georgia?

A. Yes sir, considerable. I think there is far more damage done by forest fires than any other one cause that I know of.

Q. 173. Please explain to what extent you have seen evidences of forest fires in North Georgia?

A. In nearly all of that territory down about Pearceville and the top of Cowpen mountain; all along there and along Jack River and through that section there is a great deal of evidence of forest fires. The Vestle property, on their property in there, and I have seen evidences of forest fire at Epworth and along in that section there recently.

Q. 174. Have you seen any fires actually burning?

A. I have seen smoke, but I don't recall what trip that was. You mean in Tennessee or Georgia?

Q. 175. I mean in Georgia?

A. I don't think I have.

Q. 176. Please explain in what way damage arises from forest fires?

A. I think the first thing is the burning of the leaves. It begins by burning the leaves, and the heavy rains follow, and particularly on the steep slopes of the mountain sides, where the soil is rolling it washes away the soil, and then of course that checks the growth of the timber; then other fires come along and finally a great many trees die from it. I have seen in this North Georgia Country here, as well as in other sections, where the flames have gone as high as

fifty feet on the trees, and you also see the effect on the undergrowth where it destroys that.

Q. 177. Did or not the forest fires in a measure destroy the undergrowth and underbrush?

A. Yes sir.

Q. 178. What effect does that have on the probability of the soil being washed?

A. I just stated, when you remove the leaves, and then the heavy rains come, that washes away the soil, particularly on the steep hillsides of the mountains, and there is nothing to support the trees.

Q. 179. Does that or not destroy the root growth?

A. Yes sir, that destroys the root growth; I have already stated that.

610 Q. 180. You have stated in some detail the amount of dead timber you have observed elsewhere than in North Georgia, do you remember any special localities where you have seen considerable stretches of dead timber?

A. Yes sir.

Q. 181. Where was that?

A. You mean in North Georgia?

Q. 182. No, elsewhere?

A. In the State of Tennessee we find a great deal of dead timber. In Marion, Sequatchie, part of Hamilton, Van Buren, White, part of Putnam, a great deal in Overton, Fentress, Cumberland, Roy, Roan, Morgan, Scott, and you will also find evidences of fires in Anderson and Claiborne, but not to the extent I found it in other counties; not so much of it as in other counties; also in Kentucky, Whitley County, you will find evidence of it there.

Mr. DRAKE: We except to all of these counties outside of Georgia on the ground that it is irrelevant. Exception overruled. Appeal prayed and granted.

Q. 183. You stated that you found dead timber in all of these counties?

A. Yes sir, a great deal of dead timber; a large percentage of dead timber.

Q. 184. You stated that you saw evidences of fire in Anderson and Claiborne counties; what do you mean by that, do you mean dead timber killed by fire or other causes?

A. A large percentage killed by fire, and some from other causes, I don't know, except as to the Chestnut. I think the Chestnut in these counties are dying from old age and from the borer.

Q. 185. What about the Hemlock?

A. There is very little Hemlock in Anderson and Claiborne Counties.

Q. 186. And these other counties where you found it dead?

A. There is more dead timber in Marion and Cumberland and Morgan, Overton and Scott than any counties I know of.

Q. 187. Did that timber die from forest fires or diseases other than fires?

A. Forest fires and other causes; it has been dying for a good

while. I have been doing a great deal of work in all of these counties and have been watching it very closely for twenty-five or thirty years.

611 Q. 188. State whether or not you have in your possession a map of Tennessee showing the location of all these counties?

A. Yes, sir.

Q. 189. Will you designate on that map the various counties through which you traveled and about which you have been testifying here; and also show the location of the counties you traveled over and inspected in Kentucky and North Carolina on the same map and file same as Exhibit "B" to your deposition?

A. Yes sir.

Mr. DRAKE: I except to it as being irrelevant. Exception overruled. Appeal prayed and granted.

A. I would rather not file this one; this is one I marked for your own information. I have one just like it and I will give the same counties and put it in a little better shape.

Q. 190. Do you know, Mr. Shiflett, whether or not the United States Government has had the Wetmore lands, and probably other lands which lie near Ducktown inspected by its forresters?

A. Well, I know in a general way. I have that information.

Mr. DRAKE: I except to the question and answer as not being the best evidence. Exception overruled. Appeal prayed & granted.

Q. 191. Do you know whether or not the United States Government, as a result of that investigation has purchased these lands under the Act of Congress authorizing the purchase of lands in the Appalacian region?

A. I have been advised that it has.

Mr. DRAKE: We except to that question on the ground that it is irrelevant, and on the further ground that it is hearsay. Exception overruled. Appeal prayed and granted.

Q. 192. On any of these trips which you too kthrough North Georgia, did you observe the crops and fruit trees and the condition of the fruit crops?

A. Yes sir.

Q. 193. What did you find their condition to be?

A. I found their condition to be good whenever we had sufficient rain,—unusually good. Now last year when we had such a drouth over here in Tennessee, on Jack river I never saw such

612 luxurious corn, beans, fine gardens and vegetables of all kinds and fine fruits. The year before that I don't think I ever saw finer crops when we camped on Bear branch near the Jack river.

Q. 194. What season of the year was that?

A. In September, as well as I recollect.

Q. 195. With reference to White Pine, what did you find the condition of the White Pine to be in North Georgia while inspecting it in 1912 and 1913?

A. We didn't find a great deal of White Pine, and what we did find was thrifty; particularly the young White Pines.

Q. 196. Is that with reference to White Pine growing close up to the line?

A. Not far from the line, and in Tennessee and Georgia both.

Q. 197. Did you notice any appearance of the White Pine having been damaged by any smoke fumes?

A. No sir; I didn't see the effects on the White Pine on any of these trips.

Q. 198. Do you know whether or not White Pine is specially susceptible to these fumes, is that true?

A. Yes, sir.

Q. 199. What did you find the condition of the White Pine to be through these other counties in Tennessee far removed from these furnaces?

A. A greater part of the White Pine is dying; in a very unhealthy condition and has been for a good while; it has been dying as well as other timber.

Q. 200. Do you know from what disease it is dying?

A. Well, we find a little borer that is in the White Pine; I think the little borer is doing the work and destroying a great deal; I think the fire also; just like the other timber.

Q. 201. I wish you would state, taking the forests in North Georgia close up to the line near these furnaces, what are the conditions of these forests as compared with the conditions of forests elsewhere, which you have observed in your travels?

A. Far better. The conditions are better through North Georgia than in any other section of the country I have mentioned in all these travels I have mentioned, except in one county in Ken-
613 tucky,—Harlan County, Kentucky.

Q.—. How does it compare with Harlan County, Kentucky?

A. Very well; we find conditions there and the conditions here very similar. I think that is due though largely to the fact that the timber in Harlan County, Kentucky, has been very little cut over until the last few years, and they have been fighting the forest fires up there for a number of years, and they have very fine timber and are trying to take care of it.

Q. 202. How far is it from the Ducktown furnaces to the nearest of these Wetmore lands?

A. I don't believe that I can give you that distance without going back to the map. (Refers to map.) The Ducktown Sulphur, Copper & Iron Company would be about four and one-half miles to the nearest point, and from the Tennessee Copper Company's plant would be probably the same distance.

Q. 203. These other counties through which you traveled and inspected timber, how far are they from the Ducktown Company's plant?

A. From fifty to one hundred and seventy-five miles, except Polk County.

Q. 204. Where is your deposition being taken—where are you?

A. Blue Ridge, Georgia.
Q. 205. What place did you come from to Blue Ridge?
A. Harriman, Tenn. to Ducktown, and from Ducktown here.
Q. 206. Did you come through Copperhill?
A. Yes, sir.
Q. 207. When did you come?
A. Yesterday morning.
Q. 208. That is, the morning of August 11th?
A. Yes sir.
Q. 209. Did you notice the crops and the vegetation and the foliage of the trees as you came along?
A. Along the ro-d?
Q. 210. Yes, sir.
A. Yes sir.
Q. 211. What kind of crops are growing right near the furnaces?
A. Mostly corn along the railroad between here and the furnaces.
Q. 212. What is the condition of the corn crop?
A. Fine.
Q. —. How near did you see corn growing to the Tennessee furnaces?
A. In a quarter of a mile of the D. S. C. & I. Co.'s plant, right there in the basin.
614 Q. 213. Did you, or not, see a corn field near the Tennessee plant?
A. Across the river, I believe I did. I have seen it.
Q. 214. In what years did you see corn growing there?
A. In the last few years. I don't recall the dates.
Q. 215. What was the condition?
A. When we had good seasons, very good.
Q. 216. Did you see any gardens as you came along near this plant?
A. When coming here on this trip?
Q. —. Yes sir.
A. Yes, sir.
Q. 217. What were the condition of the gardens?
A. Seemed to be green and in good condition.
Q. 218. How did the gardens and the corn crops compare in appearance there and elsewhere?
A. Where they have had plenty of rain the corn crops appear to be like they are here. In certain sections they are not near so good where we haven't had so much rain, I take it, as they have had here.
Q. 219. Did you notice the foliage on the small trees?
A. Yes sir.
Q. 220. What was the condition?
A. Green and Healthy.
Q. 221. How is the grass growing around the vicinity of the furnaces?
A. There are some mighty pretty law-s right there at the basin.
Q. 222. Did you see on any of the trees or in the gardens or in

the corn fields in there any evidence of smoke injury around in that vicinity on this trip?

A. No, sir. I don't know how it is off the railroad on this trip. I didn't go into the timber on this trip. My observations were made from the train.

Q. 223. Did you notice any appearance of injury as you passed along?

A. No sir, everything looked healthy and green.

Q. 224. What is the appearance of the foliage here in Blue Ridge, and the gardens?

A. They seem to be green and thrifty.

Q. 225. Have you been looking around some since you have been here?

A. Yes sir.

615 Q. 226. State whether or not you have been able to observe any damages whatever arising from smoke fumes here in Blue Ridge?

A. None whatever.

Q. 227. Have you observed any smoke in the atmosphere?

A. No sir.

Q. 228. Have you observed that the roads here are in especially bad condition?

A. The roads?

Q. 229. Yes, the roads, haven't they an unusually washed appearance from the rains,—heavy rains?

A. I haven't been over the roads except the railroad, and haven't paid much attention to the roads between here and Copperhill. They haven't got many roads in this country. I haven't traveled over many of them.

Cross-examination.

By Mr. DRAKE:

Q. 1. What is your profession?

A. I am a mining engineer and civil engineer. I am doing altogether specialty work. I am employed by companies as consulting engineer to examine properties and report on properties and lands, etc., and opening up mines.

Q. —. You are not a botanist then?

A. No sir.

Q. 3. Nor an etymologist?

A. No sir.

Q. 4. You haven't studied those branches of the sciences dealing with the bug life and of the life of timber and those kind of things?

A. Yes sir, I have studied some, but not in school.

Q. 5. You are not an expert on bug life are you?

A. N- sir, I am not.

Q. 6. Do you undertake to say what causes the condition of the forests immediately South of these plants in the State of Georgia for the first four, five or six miles?

A. I don't think I quite get your question.

Q. 7. Do you say that the forest is normal five or six miles in the State of Georgia South of the Tennessee Copper Company's plant and the Ducktown Sulphur, Copper & Iron Company's plant?

A. Well, I find dead timber, just like I find anywhere else.

Q. 8. Do you say that that forest is normal, Mr. Shiflett?

A. It's hardly normal; the timber is too scrubby to be
616 normal.

Q. 9. What is the matter with it, if it's not normal?

A. I think a great deal of it has been cut over, and then the fires; we have had a number of fires, I take it, like we have everywhere else, and there are a great deal of trees dying from causes, I don't know.

Q. 10. You don't know what is causing it?

A. No sir.

Q. 11. You do know that there is a great deal of dead timber in there?

A. I know that there is some dead timber in there; I don't know that there is a great deal of dead timber there.

Q. 12. Do you say that that forest is in a great deal better condition than the average forest in the South?

A. No sir, not in the South. I made reference to certain counties.

Q. 13. You don't mean to say the forests generally in the South?

A. No sir, I have confined myself to the counties I have been working in.

Q. 14. These counties you picked out were the worst affected sections you know of anywhere?

A. I believe so.

Q. 15. You don't know what is causing it to die up there do you?

A. I think I do.

Q. 16. Do you know what is causing it to die generally?

A. Some of the timber is dying from causes I don't know, not being familiar with the causes, but I know that a good deal of it is destroyed by forest fires. I think the biggest portion of it is destroyed by forest fires.

Q. 17. That is your opinion, you don't speak as an expert on that?

A. No sir, I don't speak as an expert, I am not an expert and don't claim to be, but I believe that I have intelligence enough to know good timber from bad timber and to know when it is dying and not dying.

Q. 18. You've done said that you didn't know what was killing it?

A. I said I didn't know what was killing all of it. Unless you watch a tree from the beginning I don't know that any man could tell what killed it, but we have our opinions in regard to these
617 matters, and these opinions are based on our observations from time to time.

Q. 19. How many times have you testified for the Ducktown Copper Company?

A. Let's see—I think three or four times.

Q. 20. You have been in their employ off and on ever since 1909 haven't you?

A. I didn't do any work for them for a considerable time. I did some work for them in 1909, and I don't think I did any more work for them until 1912.

Q. 21. Since 1912, you have done some work for them?

A. Yes sir, I have done some work.

Q. 22. Been in their employ off and on?

A. Yes sir.

Q. 23. Even now?

A. Yes sir, I am here as a witness.

Q. 24. Have you been doing any inspection work for them for the last few weeks or months?

A. Not in the last few weeks. The last inspection I made was in February and March of this year.

Q. 25. Have you ever worked for the Tennessee Copper Company?

A. No sir.

Q. 26. You have worked for some other corporations or capitalists, as you say, in this kind of work, heretofore, have you not?

A. Yes sir, in the examination of mining properties and timber properties and reporting on them.

Q. 27. You haven't worked for any other Copper Company around here in this neighborhood, have you?

A. No sir, I have not. I believe I did do some work for a copper company on some paper, but I don't really know whether they had copper or not.

Q. 28. You haven't been in North Georgia this year making any inspections in there this summer have you?

A. No sir, I have been very close to the line, but I haven't been in North Georgia this summer.

Q. 29. Do I understand you to mean, Mr. Shiflett, that this copper smoke is a benefit to North Georgia,—you say that these forests are in better condition than these other forests you have been examining?

A. No, I don't say that it is beneficial; no kind of smoke is beneficial.

Q. 30. What am I to understand you to mean when you
618 say that they are in better condition than these other forests?

A. I said that the timber was in better condition; that the percentage of dead timber was less in North Georgia.

Q. 31. Wouldn't you attribute that fact to its being located close to the smoke or something like that?

A. No, I don't think the smoke has got anything much to do with the timber in this section.

Q. 32. You don't believe that the smoke kills it anyway?

A. Yes, I believe that the constant application would kill it.

Q. 33. You spoke a number of times about the smoke zone, or damage zone, how far did that extend into Georgia?

A. About as far Southwest as Pearceville. We saw some evidence

of it there, and a little East of Epworth; I don't think any further South than that.

Q. 34. You said that the smoke area had not extended since 1909, what do you mean by that?

A. Very little, except through the low gaps.

Q. 35. Through the low gaps, how far has it extended since 1909?

A. I can't say how much, but very little.

Q. 36. Would you say five miles or further?

A. No sir.

Q. 37. These points which you have named as being outside of what you call the smoke zone, I will ask you if this is not as much as four to five miles South and Southwest of the Tennessee Copper Company, and six, seven and eight miles South and Southwest from the Ducktown Copper Company?

A. About that, I think that it is.

Q. 38. As I understand you, in your trips along in this smoke zone in Georgia, made in 1909, 1912 and 1913, you found evidence of smoke damage?

A. The only evidence of recent effects were in one or two places. I take it that some of that country was affected a good many years ago.

Q. 39. In your original examination didn't you say to General Fowler that when you made these different trips that you took, in each instance, didn't you say that you found evidence of smoke damage in this smoke zone, as you call it?

A. I have found evidence of smoke inside of that zone. I made that statement.

619 Q. 40. Again, didn't you state, and isn't it a fact, that on every one of those trips over in Georgia, you found evidence of smoke damage?

A. If I went over the same territory I did.

Q. 41. You know where it is, and you can see it in your mind's eye, can't you, now where is it?

A. The only recent evidence of smoke damage is around Epworth and East of Epworth.

Q. 42. And up and around Fightin' Town Creek, wasn't there a little up there?

A. No sir.

Q. 43. Between Big Fightin' Town and Little Fightin' Town?

A. No sir, no evidence in there.

Q. 44. Over towards Tumlin Creek, didn't you see it in there?

A. No sir, not anywhere. Near the headwaters I think there is a little evidence of smoke; that is there is some dead timber on upper Tumlin Creek, I don't know what killed it.

Q. 45. Didn't you see burnt leaves that looked like they were fresh scorched and burnt on them trips?

A. In 1910 I did.

Q. 46. Didn't you in 1913, last year?

A. No sir.

Q. 47. Didn't you in 1912?

A. No sir.

Q. 48. Didn't you tell General Fowler that on that trip in 1912 you saw recent damage, and saw where it had been all along there?

A. From fires or from smoke?

Q. 49. I mean burns from smoke—didn't you see that all along there?

A. I believe I did say in 1909 and 1910 and I believe in 1912. I think I saw more evidence in 1910 than I have ever seen since, and that was up near Epworth recently. I had been on Fightin' Town Creek and when I went down I couldn't see the recent effects of the smoke, but when I went back I could. I saw where it struck the leaves along the road, and then I made an examination of quite a little area.

Q. 50. Do you know smoke damage when you see it?

A. Yes sir, I think I do.

Q. 51. Is that easily told from anything else?

A. Yes sir.

Q. 52. If you did see it you would know it?

A. Yes sir.

620 Q. 53. What is the effect of smoke on vegetation?

A. As I stated just now the constant application would soon destroy it and kill it.

Q. 54. What is the temporary effect?

A. The temporary effect is to check the growth, if it is heavy enough.

Q. 55. What is the temporary appearance of the foliage that has had an application of this sulphur dioxide?

A. Discoloration.

Q. 56. In what way?

A. It has something of the appearance of frost bite.

Q. 57. After it has stayed for a few days or weeks, I will ask you if it doesn't change color further and turn a brownish cast?

A. Yes sir.

Q. 58. That is the appearance?

A. Yes sir. But that will depend, however, on the amount or quantity of smoke that the leaves get.

Q. 59. You stated that Hemlock was scarce up in that country, up in this North Georgia country?

A. I didn't see a great deal of it except in certain localities. On Jack river there is a great deal of it but that has been cut over.

Q. 60. Didn't you state in your original examination that fires burned the leaves off, leaving the slopes of the steep mountain sides bare, and that would cause the Hemlock to die?

A. Yes sir, and any other tree.

Q. 61. Do you know anything about the nature of the Hemlock?

A. Well, it is a long life timber, I think.

Q. 62. Do you know its habits and where it grows?

A. Along the elevations and steep hillsides mostly. You will find it along the ravines and hillsides, as well as down in the ravines.

Q. 63. Do you know whether or not Hemlock is very susceptible to this smoke, this sulphur dioxide?

A. No sir, I don't know that I do.

Q. 64. Well you know well enough that smoke does affect the trees, do you know what varieties it affects soonest, and what varieties are most susceptible to this smoke injury?

A. Only from my observations. The young and tender white pine and the locust show it quicker than any other tree.

Q. 65. The locust, did you say?

A. Yes sir.

621 Q. 66. If the Hemlock is the most easily affected of the trees, you hadn't observed that?

A. No sir, I have not.

Q. 67. You think locust, and you mean by that these black locusts they make posts out of?

A. Yes sir; that is the leaves on it show it very quickly; like the pines on the White Pine.

Q. 68. If the locust is in fact the last tree almost to be affected by smoke you haven't observed that, and don't know that to be a fact?

A. There is not so very much locust that I know of anywhere near the copper plants. There is a couple, I believe, a little East of the D. S. C. & I. Company plant over in Tennessee in Polk County, near the Cherokee County line, and a little locust South of the Ocowee river.

Q. 69. Please answer my question Mr. Shiflett, I didn't ask you anything about that?

A. I wouldn't swear that it is, but I know we observe it on the leaves very quickly. The least little smoke will show on the locust leaves quickly, when you don't find it anywhere else.

Q. 70. Do you know how the Hemlock reproduces itself?

A. No sir.

Q. 71. Do you know about plant life enough to know that when a tree is in bloom or the pollen is on it that it is most easily affected at that time?

A. I should think so, yes sir.

Q. 72. If the Hemlock reproduces itself by seed and does not in any other way, you don't know that to be a fact?

A. No sir, I do not.

Q. 73. You wouldn't undertake to say what has caused the almost total destruction of Hemlock in North Georgia, would you?

A. No sir, nor anywhere else.

Q. 74. Do you know how the oak reproduces, do you?

A. Well, from the acorn.

Q. 75. Any other way?

A. I don't know that it does; I don't know of any other way.

Q. 76. You don't know that they come up from the roots?

A. Of course they have sprouts from the roots.

Q. 77. That would be one way to reproduce, wouldn't it?

A. Yes sir.

622 Q. 78. You spoke about being over in the Jack river country, and said that country had never been affected by the smoke?

A. I believe I made that statement; that's what I think about it. I don't think that the smoke ever affected anything in the Jack river country.

Q. 79. You stated as a reason that the smoke would diffuse?

A. I think the smoke would diffuse before getting there.

Q. 80. What reason would you give for the smoke not getting over there?

A. You mean from the copper companies' plants?

Q. 81. Yes.

A. I think that it would diffuse long before it ever got there.

Q. 92. Don't you know that there is a high mountain between where your camp was on Jack river and these copper companies, and that is the reason that smoke can't get over there?

A. No, I wouldn't say that.

Q. 83. Any other mountain in there?

A. Yes sir.

Q. 84. What are they?

A. One of them is the Blue Ridge; there are two or three different mountains in there that go by local names.

Q. 85. Those mountains are between where your camp there on the Jack river was where you saw all these fine crops, and the copper companies?

A. Yes sir, those mountains are between our camp and the copper companies.

Q. 86. Between the Jack river where you saw such fine crops; such fine corn and green vegetation generally that you were telling Mr. Fowler about in 1913?

A. Yes sir, in 1912 and 1913.

Q. 87. And the reason that you give that smoke can't get in there is that it would diffuse?

A. There are a great many reasons why smoke doesn't get in there. I have been in there frequently and have never seen any, and I don't believe that it would get in there.

Q. 88. And the least reason you give for that is them high mountains intervening?

A. I haven't given that at all.

Q. 89. That wouldn't be any reason at all?

A. I don't know that that is any reason.

623 Q. 90. You don't know much about the diffusion of gases and the way they travel do you?

A. Well, I don't know about all of them, but I know something about it.

Q. 91. Do you know enough about it to know how the smoke travles in this country from these plants?

A. Well, I shouldn't think that the smoke from the furnaces, or from the stack there near the plant would ever reach this country.

Q. 92. That's not the question; please answer the question?

A. No, sir, I can't tell you.

Q. 93. Do you know whether or not the mountain side facing towards these plants will be more affected by smoke than the mountain side that faces in the opposite direction?

A. Yes, it would, but if there was sufficient smoke to back up on the other side of the mountain, the other side would be affected almost as badly as the side presented to the furnaces.

Q. 94. Wouldn't that be on account of a ravine or gap or break in the mountain so that the smoke could go through?

A. Yes, sir.

Q. 95. Now, if there was a straight mountain and no gap or break in it, wouldn't the side facing the furnaces be affected more than the opposite side of the mountain?

A. I should think that it would.

Q. 96. Wouldn't that lead you to believe that a mountain side intervening between these plants would be a protection from the smoke?

A. If it was high enough it might.

Q. 97. If the mountain was only moderately high, wouldn't that have a tendency to check and diffuse the gas?

A. I think that the smoke strikes low down and goes through the low gaps.

Q. 98. Well, then you wouldn't say that these hills around Ducktown Copper didn't diffuse or scatter the gas or smoke?

A. Yes, sir.

Q. 99. How do you reconsile that with the statements you have been making?

A. You have been giving me a mountain five or ten miles away from the plant. I don't think that they would have any effect on the conditions of the smoke. Right close to these plants I think they would.

624 Q. 100. Didn't I ask you if any mountain or any hill wouldn't it tend to diffuse or scatter this smoke?

A. It would, if near by.

Q. 101. Will you please explain why, if the smoke struck a mountain far off it wouldn't stop it just as well as if sitting right by?

A. It might if it got there. I don't know that it would get to this mountain far off.

Q. 102. Now you do know, do you not, that every vestige of timber on top of these hills around in the immediate vicinity and neighborhood of the Ducktown Copper Company is gone?

A. No, sir, I do not; there is a good deal of timber on the East of the two plants in the basin.

Q. 103. Is there a tree of any kind whatever on top of the ridges between these two plants; if so what is it and where is it?

A. No, sir, not that I know of between the two plants.

Q. 104. What would you say has caused all of that timber to be gone from there?

A. I can't say as to how that timber was gone. That timber was gone before I went into that country. I have been advised that the greater part of it was cut out and used in there when they were using the open hearth process.

Q. 105. Those hills are as barren as a publicly traveled street aren't they?

A. They are pretty barren of trees.

Q. 106. Would you think that any forest that was cut off for wood or for logs would leave it in that condition, is that what I am to understand from your answer?

A. I do not, no, sir.

Q. 107. You have just answered that the wood was cut off and hauled off for wood and timber and other things and left me to believe that was the cause of the timber being gone?

A. No, sir, I think that the smoke killed a good deal of the timber.

Q. 108. Don't you know that that smoke is the cause of no young timber springing up there?

A. The soil is eroded. There is some young timber growing where they have good soil; they have good gardens, fruit trees and grow fine fruit there. I don't know that there has ever been
625 any timber or young trees planted to see what it would do, but there are some yellow pines out West from the plant and are standing there yet.

Q. 109. What were you doing out one hundred and seventy-five or eighty miles in middle Tennessee looking at forests?

A. I had work out there, and I was pretty familiar with conditions out there and I had stated what those conditions were; that they were worse there than they were in North Georgia, and after I made that statement I think probably some of them wanted to make an inspection of it, and that is when we made that trip.

Q. 110. You volunteered this information and then carried these men to look at it?

A. This information was given sir, on the witness stand.

111 Q. You are not the cause then of these men; this party going over into these counties in the mountains of Tennessee?

A. No, sir, I don't know that I am.

Q. 112. You are the one that gave them the information?

A. Yes, sir.

Q. 113. Mr. Sherman Reese was with you on that trip; did he take you or did you take him?

A. Mr. Sherman Reese was on one of the trips; I don't know whether he made any other trips or not; I am not sure as to that.

Q. 114. You went through fine healthy forests over in the mountains of Tennessee?

A. I don't find normal conditions anywhere.

Q. 115. Didn't you find thousands of fine healthy forests you wouldn't want to compare North Georgia with?

A. Where would I find them?

Q. 116. Please answer my question?

A. No, sir, except small bodies of timber occasionally.

Q. 117. If it was so bad all along the route, why did you travel 175 miles to show it to them to make the comparison?

A. I had made this statement on the witness stand, and they wanted to see it, and I didn't hesitate to show it to them.

Q. 118. You say that you couldn't get any Chestnuts in Tennessee?

A. Not in the counties I have been through.

Q. 119. Have you ever been on Frog Mountain?

A. Yes, sir.

626 Q. 120. Didn't you state in your original examination that you had worked over there?

A. No, sir, except inspecting trips.

Q. 121. That's what I mean?

A. Yes, sir.

Q. 122. That's over in Tennessee?

A. Little Frog is.

Q. 123. Well, over on Little Frog in Tennessee, what about the Chestnuts?

A. The Chestnuts are nearly all dead there.

Q. 124. I will ask you this, if there ain't enough Chestnuts that a man in the Fall of the year couldn't live on Chestnuts, if he wanted to?

A. I would hate to undertake the job myself.

Q. 125. I am handing you FP-8761; what kind of a tree do you say that is? And what caused the injury? (Hands folder with leaf in it to witness.)

A. It is a leaf; I don't know what it is; if I could see it on the tree I could probably tell you, but I can't tell you what it is now.

Q. 126. Tell us what caused that injury, if you can?

A. I wouldn't undertake to say what caused this injury; I don't know sir, what caused that injury.

Q. 127. Would you say that that is smoke injury?

A. No, sir, I wouldn't say what it is.

Q. 128. I am handing you FP-15014 (hands folder with leaves), please state what kind of leaves these are, and what caused the injury?

A. That looks like smoke, but I wouldn't swear that it was. It's an oak leaf I think.

Q. 129. What kind of oak?

A. I suppose that its white oak.

Q. 130. What caused the injury?

A. It looks very much like smoke, but I wouldn't swear that it was.

Q. 131. I am handing you FP-15728 (hands folder with leaves), please state what kind of leaf that is, and what caused the injury, if you know?

A. That's oak of some character. I don't know just what kind. It looks like scrub oak, called black jack, and the injury looks very much like fire might have affected it, but I can't swear that fire did. A man can fix these leaves up to suit himself.

627 Q. 132. I am handing you FP-15017 (hands folder with leaves), please state what kind of leaves those are, and what caused the injury?

A. Oak. I don't know what caused the injury. I think the same as the other; probably this discoloration is due to the same cause; I don't know whether it was smoke or not.

Q. 133. I didn't hear what kind of leaf you said it was?

A. I don't know what kind of oak it is.

Q. 134. I am handing you FP-15701 (hands folder with leaves), please state what kind of twig or foliage that is, and what caused the injury?

A. That is pine of some description, or white pine.

Mr. DRAKE: I except to you gentlemen making side remarks to witness. Exception overruled. Appeal prayed and granted.

A. It's dead now, but it looks like White Pine. I don't know what deadened it. It might have been done by fire and something else might have caused it.

Q. 135. I am handing you FP-8485 (hands folder with leaves), please state what kind of twig or leaves those are, and what caused the injury?

A. That is oak.

Q. 136. What kind of oak?

A. I think its black-jack. That looks very similar to the other specimens you showed me.

Q. 137. What kind of injury did you say?

A. I don't know what did it.

Q. 138. Do you think that it is the same as the other?

A. I believe so.

Q. 139. I am handing you FP-15697 (hands folder to witness), please state the kind of leaves those are and what caused the injury?

A. Chestnut, I believe. I can't tell for certain what caused the injury. It is similar to the other samples.

Q. 140. I am handing you FP-15029 (hands folder with leaves), please state what kind of leaves those are, and what caused the injury?

A. These are oak also.

Q. 141. What kind of oak?

A. That is the black jack, I think. I could tell better if they were green, but it looks very much like the scrub oak.

628 Q. 142. Did smoke cause that injury?

A. I wouldn't swear that it did.

Q. 143. Would you swear that it didn't?

A. No, sir.

Q. 144. The truth is you don't know much about smoke injury?

A. I don't know much about these samples you have got here. I know it when I see it in the woods.

Q. 145. Haven't you seen millions of leaves in these North Georgia woods, just like that?

A. No, sir.

Q. 146. I am handing you FP-8724, please state what kind of leaves those are, and what caused the injury?

A. These are maple, I think. I can't say for certain what caused the injury.

Q. 147. In your opinion id that smoke injury?

A. I would like to see that on the tree before I express an opinion.

Q. 148. I will hand you just one more, FP-8740, (hands folder with leaves), please state what kind of twig or leaf that is?

A. That is locust, I think.

Q. 149. What caused the injury?

A. I couldn't swear to that; I don't know.

Q. 150. Have you been about these plants, the Ducktown Copper Company's plant, Mr. Shiflett, a good deal?

A. Yes, sir, I have been about there a good deal during the time of my service for the State as Chief Mine Inspector.

Q. 151. And before that time and since that time,—in fact you are more of a mining expert that you are a tree expert, aren't you?

A. Yes, sir.

Q. 152. You are a mining engineer, are you not?

A. Yes, sir, and civil engineer.

Q. 153. Do you know the character of the furnaces they have over there?

A. Yes, sir, but I am not familiar with the other furnaces over there.

Q. 154. What kind of furnaces have they?

A. Furnaces for smelting copper ore, but I don't know anything about the other furnaces there; I don't know much about copper.

Q. 155. Do you know how big a furnace they use?

A. No, sir, I do not.

629 Q. 156. I will ask you to look at pages 226-227 of the Copper Hand Book, Volume 11, by Weed, and say if that furnace is not a 500 ton daily capacity, the Ducktown Copper Company's plant?

Mr. FOWLER: Counsel for defendant company objects to the question and answer because it is hearsay evidence. The exception is overruled. Appeal prayed and granted.

A. Yes, sir, two 500 ton Water Jacket Sectional Blast furnaces.

Redirect examination by Mr. FOWLER:

Q. 1. You have been asked about the smoke zone in 1909; now was that smoke zone extended in 1909, or 1906?

Mr. DRAKE: I except to the question because leading. Exception overruled. Appeal prayed and granted.

Q. 2. When was that smoke zone extended?

A. After the Tennessee Copper Company built that high stack.

Q. 3. In what year was that?

A. In 1906.

Q. —. What did you mean by the extension of the smoke zone in 1909 in response to the question asked you by counsel for the plaintiff?

A. That it had gone a little further from the zone that I had fixed, out through the low gaps.

Q. 5. Did that smoke zone extend further in 1909 than it did in 1906 and 1907 just after the construction of that high furnace?

A. No, sir.

Q. 6. What was the real cause of the extension of that zone?

A. I think that it was due more than any other cause to the increased production of the ore that was smelted and the high stack of the Tennessee Copper Company sending the smoke further away from the basin, and I think that the smoke of the D — C & I. Company diffused beyond the point of damage before it left the basin. I am thoroughly satisfied of this.

Q. 7. You speak of an increase in capacity of the furnaces, do you refer to the D. S. C. & I. Company, or to the Tennessee Company?

A. To the Tennessee Company.

630 Q. 8. What was it that created the original smoke zone; was it the roasting system?

Mr. DRAKE: I except to that as being original evidence and leading.

Exception overruled. Appeal granted.

9 Q. Now state whether or not, from your observation was that smoke zone decreased when the acid plant went into operation?

A. Yes, sir. You could begin to see signs of new growth timber coming out on the mountain sides East of the D. S. C. & I. Co. also on the mountain side opposite and East from them.

Q. 10. State whether or not, Mr. Shiflett, since the Ducktown Company has put in its acid plant you have seen evidence of smoke damages arising from that company?

A. No, sir, I have not.

Q. 11. You have been asked something about the condition of the vegetation on Fightin' Town Creek, when was it that you were on Fightin' Town Creek?

A. I think the trip on Fightin' Town Creek was made in 1910, as well as I remember, now.

Q. 12. You say that you never saw any smoke damage over there at all?

A. No, sir.

Q. 13. Did you ever see any evidence of smoke damage on that creek?

A. No, sir.

Q. 14. What time in the year 1910 were you there?

A. At different times. I had some prospecting work in there, and I would go there occasionally during the summer season. We began the work in May, if I remember, and the work I think we quit the work in September, if I am not mistaken. I was in there at different times while this prospecting work was being done.

Q. 15. To what extent did you examine the timber on Fightin' Town Creek?

A. At that time?

Q. *15*. Yes, sir.

A. Well, in a general way. I didn't make an inspection at that time to ascertain the cause and affect by smoke, but there was no evidence of smoke in there; absolutely none.

631 Q. 17. Did you later look at that timber for any purpose?

A. Yes sir.

Q. 18. How far up and down the creek did you look at it?

A. I have been nearly all over Fightin' Town creek; to the head-*quarters;* up in over Jack river and from Jack river up into Murray County.

Q. 19. You have been asked about the hills up around these furnaces and between these furnaces, I believe you say they are barren of timber?

A. Yes sir.

Q. 20. Any underbrush on many of these hills?

A. Between the furnaces?

Q. 21. Yes.

A. I don't think so.

Q. 22. Do you know whether or not it is covered with sedge grass?

A. No sir, not covered. The soil has eroded in a good many places, but there is a good deal of sedge grass over in there, but not in all of it, but it is in there in a good many places.

Q. 23. Do you know whether or not that sedge grass is burnt off in the fall?

A. I have seen it burn.

Q. 24. What effect would that have on the undergrowth?

A. That would kill the undergrowth and gives the rain a chance to erode the soil.

Q. 25. State whether or not you have seen fruit trees right around near these furnaces?

A. Yes sir.

Q. 26. What is their condition?

A. Very vigorous.

Q. 27. What is the condition of the gardens right around these furnaces?

A. Very good.

Mr. DRAKE: We except to that as being original evidence.

Exception overruled. Appeal prayed and granted.

A. I have seen very fine gardens where they have the ground properly cultivated; I have seen some as fine as I have ever seen anywhere.

Q. 28. Have you observed the location of these furnaces with reference to the Georgia line?

A. Yes sir.

Q. 29. State whether or not you have from time to time observed some coming from these furnaces?

A. Yes sir, and the difference in the elevation of these two stacks.

632 Q. 30. You have been asked on cross examination about damages at different times in the last four or five years in Georgia, state from which one of these furnaces these damages arose, such as they were?

A. If any damage at all, it must have come from the Tenessee Copper Company's plant.

Mr. DRAKE: We except to that as being original evidence; and also because it is a conclusion of the witness, with no facts stated on which to base a conclusion.

Exception overruled. Appeal prayed and granted.

Q. 31. State why it must come from the Tennessee Copper Co.?

A. The Tennessee Copper Company smelts more ore and their stack is higher by 100 feet; they have a higher stack and the smoke from its stack would carry to a greater distance in the mountainous section, than the other.

Q. 32. How much nearer is it to the Georgia line?

A. I have given you that once, but I have forgotten what it is.

Q. 33. About three miles, wasn't it?

A. I suppose it is.

Recross-examination by Mr. DRAKE:

Q. 1. These forest trips that you made in Georgia, Mr. Sherman Reese was your conductor, wasn't he?

A. Not on all of them.

Q. 2. On how many of them was he your conductor?

A. I think Mr. Reese was on every trip made for the Ducktown Sulphur, Copper & Iron Company.

Q. 3. Wasn't you sent out specially to look at the lands of Mr. Vestle and Mr. Shippen?

A. Yes sir, and get an general idea of the country I traveled over.

Q. 4. Didn't you state in your original examination, and since that, that the investigations you made were directed to and confined to these lands?

A. In 1912 and 1913 I think they were. In 1909, I don't recall just what case we had on trial and I was a witness in. Mr. Reese wasn't with me on that trip. I think I was accompanied by Mr. Simmons, Mr. Green Simmons.

Q. 5. You observed this smoke injury enough to know
633 that the effects go in sections and in spots?

A. Yes sir.

Q. 6. Don't you know if you had a conductor steering you away from it as much as he could, you might not see a great deal of it, not as much as if you had one with you out hunting for smoke; and that if you were out hunting for smoke you would find more of it than if you had a conductor trying to keep you away from it; that's a fact, ain't it?

A. I don't think that Mr. Reese had anything to do with my observations. When we come to property that Mr. Reese was familiar with, he showed it to me. I went where I pleased and didn't ask Mr. Reese. I have been all over this country, not only the Vestle property, but all of it.

Q. 7. I am asking you seriously, if it is not a fact that a man thoroughly familiar with this country, the smoke being in spots and sectiond, taking a man that didn't know the country, if he couldn't

conduct him through and keep him away from the smoke injury entirely?

A. Not if the man was conscientious in his work; he would want to see what was doing it and the conductor wouldn't have much to do with it. I will say this, however, that Mr. Reese was anxious for us to see as much of the country as we could anywhere we wanted to go.

Q. 8. You said this morning that all the damage you ever seen in the State of Georgia in about five years' inspection wouldn't, if put all together, wouldn't amount to more than five acres?

A. Well, I said the recent effect I had seen.

Q. 9. Do you mean that five acres in all would constitute all that you had saw scattered over the country?

A. Yes sir, where I seen the recent effects on the trips for the Ducktown Company, and the trip on Fightin' Town Creek.

Q. 10. That was one of the trips you spoke of?

A. Two trips.

Q. 11. You don't mean then, all your trips?

A. Outside of the smoke limit, I do. That is the only evidence I saw.

Q. 12. That was on these two trips up the same route?

A. It was East of Pearceville.

634 Q. 14. I understood you to say that the smoke limit extended three to five miles South of the Tennessee plant?

A. Yes sir.

Q. 15. And eight miles South into Georgia from the Ducktown plant?

A. I believe I gave it further than that in some places.

Q. 16. In the low gaps it extended further?

A. Yes sir.

Q. 17. And that zone broadened about 1909; seemed to be broadened through the gaps only, and the other part narrowed down since the installation of the acid plants?

A. That occurred—I can't say when it did occur, because I wasn't in there.

Q. 18. Will you name some of the gaps through which it extended?

A. Without referring to my notes, I can't.

Q. 19. I mean off-hand?

A. No sir, I can't.

Q. 20. They are in the State of Georgia, some of these gaps are?

A. Yes sir.

It is agreed between counsel for plaintiff and defendants to waive reading over the testimony to the witness and having him to sign it.

STATE OF GEORGIA,
Hall County:

GAINESVILLE, GA., Sept. 7, 1914.

I, E. P. Kingsbery, the Commissioner before whom the foregoing deposition was taken by agreement hereby certify that I took the evidence of said witness in short hand and correctly transcribed the same into typewriting.

E. P. KINGSBERY,
Commissioner.

635 EXHIBIT No. 10 TO DEPOSITION OF FRANK E. SHIPPEN.
E. P. Kingsbery, Commissioner.

This Indenture, made and entered into this First day of May, Nineteen Hundred and Eight, between Shippen Brothers Lumber Company, a corporation organized under the laws of the State of Georgia, hereinafter called the "Lumber Company", party of the first part, and Tennessee Copper Company, a corporation organized and chartered under the laws of the State of New Jersey, hereinafter called the "Copper Company," party of *this* second part.

Witnesseth: That the said Lumber Company party of the first part for, and in consideration of the terms and conditions contained in a certain contract, entered into between the parties hereto on April 1st, 1908, and of the terms and conditions of a certain instrument of release executed on May 1st, 1908, and filed in escrow with Trust Company of America in New York City in pursuance of said contract of April 1st, 1908, to both of which contracts reference is here made as to their specific provisions and both of which contracts are made a part of this consideration as fully as though herein set out and copied in full, and in consideration of one dollar cash in hand paid at and before the sealing and delivery of these presents, the receipt whereof is hereby acknowledged, has and does hereby settle, compromise and release, each, every and all its claims and demands against said Copper Company, party of the second part, arising out of smoke injury or damage from the operation of the furnaces of said Copper Company in Polk County, Tennessee.

And it is further covenanted and agreed by said Lumber Company to and with said Copper Company that the said Lumber Company hereby acknowledges full and complete satisfaction and payment of all claims and demands past and present which it now has,
or may have had against said Copper Company, its succes-
636 sors or assigns for any and all damages that may have arisen or that may arise from the operation of its smelter plants or from any smelter plants it may now have, or which may hereafter have by reason of smoke, fumes and gases passing over and upon the lands or timber now owned or controlled or in which said Lumber Company is now interested, and said Lumber Company, hereby covenants not to make any claim or demand in the future, or bring any action or proceeding either in law or equity on account

of damages or injury by reason of smoke, fumes and gases passing upon lands and interests now owned or claimed to be owned, controlled, leased or optioned by said Lumber Company, by any operation of said Copper Company without limitation in respect to any increase in the amount or intensity of such smoke, fumes and gases, or from any present or future method of operation, and *siad* Lumber Company hereby covenants to hold the said Cop-er Company harmless of, from, and against all claims and demands which may be asserted by said Lumber Company, its successors or assigns or any other party or parties for damages to said lands, timber and interest hereinafter described, by reason of smoke, fumes and gases passing over and upon the same.

But in case the Lumber Company sells any of its lands or interests the part of this covenant in reference to holding the Copper Company harmless shall not apply to the damages which might be claimed by its successors in title by reason of any increased amount or intensity of smoke, fumes and gases over and above that allowed by the easement hereinafter referred to.

And it is further covenanted and agreed by the said Lumber Company to and with the said Copper Company that for and in consideration of the above premises it has granted, bargained, sold and conveyed and does hereby bargain, sell and convey to said Copper Company, party of the second part, its successors and assigns a right or easement to maintain and operate smelters or plants as it may require, and to allow and permit the smoke fumes and gases therefrom to pass over and upon the following hereinafter
637 named lands, timber, options and interests without let, hindrance or molestation, of said Lumber Company, its successors or assigns, creating by this instrument a perpetual servitude, easement or estate, which shall run with the land in favor of said Copper Company, its successors or assigns and against said Lumber Company, its successors and assigns in respect to all the lands, timber, options, contracts and interests now owned or claimed to be owned, leased or optioned, or in which said Lumber Company claims to have interests, provided, however, that the said Copper Company, its successors or assigns maintain a smelting plant situated outside of the State of Georgia, emitting substantially no more smoke, fumes and gases than its present smelting plants can or might emit when operated at their fullest capacity without regard to the operation of the sulphuric acid plant and in case the said Copper Company, party of the second part extends its plant into the State of Georgia, or emits substantially more smoke, fumes and gases than such fullest capacity so stated, then in either of those events this easement shall not extend to the additional smoke fumes and gases so liberated or emitted, or any increased damage that may occur by the establishment of the said Copper Company's plants in the State of Georgia.

And it is further covenanted and agreed that nothing herein contained shall be construed as an admit-ion of causing any damage or of any liability of said Copper Company to said Lumber Company in respect to doing or causing any damages to said land or timber interests.

The lands and interests of the Shippen Brothers Lumber Company, now claimed by it and covered by the terms conditions, szipulations and provisions of this contract are more particularly described as follows: Original land lots numbers ten (10), Eleven (11), Twelve (12), Sixteen (16), Seventeen (17), Eighteen (18), Nineteen (19), Twenty (20), Twenty-one (21), Twenty-seven (27), Twenty-eight (28), One Hundred and twenty (-20) acre-more or less of lot number Forty-six (46), all of lots numbers Forty-seven (47), Forty-eight (48), Forty-nine (49), Fifty-two
638 (52), Fifty-three (53), Fifty-five (55), Fifty-six (56), Eighty-four (84), Eighty-seven (87), Ninety-four (94), Ninety-five (95), Ninety-six (96), One hundred and Twenty-one (121), One Hundred and Twenty-two (122), and One Hundred and Twenty-four (124), all being situated in the Sixth District and first Section.

Also original land lots numbers Fifteen (15), Sixteen (16), Seventeen (17), Forty-seven (47), Fifty-three (53), and Eighty acres more or less of original land lot number Sixty-eight (68), all in the Fifth District and Second Section.

Also Original land lots numbers Five (5), Six (6), Seven (7), Eight (8), Nine (9), Ten (10), Eleven (11), Nineteen (19), Twenty-nine (29), Thirty (30), Thirty-two (32), Forty-one (41), Forty-two (42), Forty-four (44), Seventy (70), Seventy-two (72), Seventy-three (73), Seventy-four (74), One Hundred Sixty-one (161), One Hundred Sixty-five (165), Two Hundred Sixty-seven (267), Two Hundred Sixty-nine (269), Two Hundred Seventy (270), Two Hundred Seventy-two (272), Three Hundred and Three (303), Three Hundred and Four (304), Three Hundred Five (305), Three Hundred Eight (308), Three Hundred Nine (309), Three Hundred Ten (310), Three Hundred and Eleven (311) and Eighty acres more or less of original lat Number Sixty-seven (67) all in the Sixth District and second Section.

Also original land lots numbers Eighty-three (83), One Hundred Seventeen (117), One Hundred Thirty-three (133), One Hundred Thirty-six (136), One Hundred Fifty-two (152), One Hundred Fifty-five (155), One Hundred Fifty-seven (157), One Hundred Sixty-nine (169), One Hundred Seventy (170), One Hundred Eighty-eight (188), One Hundred Eighty-nine (189), One Hundred Ninety-two (192), Two Hundred and Three (203), Two Hunded and Seven (207), Two Hundred Twenty (220), Two Hundred Twenty-one (221), Two Hundred Twenty-five (225), Two Hundred Twenty-six (226), Two Hundred Twenty-seven (227), Two Hundred Forty-one (241), Two Hundred Forty-two (242), Two Hundred Sixty-one (261), Two Hundred Sixty-two (262), Two
639 Hundred Sixty-four (264), Two Hundred Sixty-five (265), Two Hundred Seventy-five (275), Two Hundred Seventy-six (276), Two Hundred Seventy-seven (277), Two Hundred Seventy Eight (278), Two Hundred Seventy-nine (279), Two Hundred Eighty (280), Two Hundred Eighty Two (282), Two Hundred Ninety-one (291), Two Hundred Ninety-three (293), Two Hundred Ninety-five (295), Two Hundred Ninety-six (296), Two Hundred

Ninety-seven (297), Two Hundred Ninety-Eight (298), Two Hundred Ninety-nine (299), Three Hundred (300), Three Hundred Fifteen (315), Three Hundred Sixteen (316), Three Hundred Twenty-two (322), One Hundred and Forty-five (145) acres more or less of original land lot number Two Hundred and Nine (209), and Eighty acres more or less of *of* original land lot Two Hundred and Ninety (290), all situated in the Seventh District and Second Section.

Also original land lots numbers Twenty-one (21), Twenty-four (24), Thirty-seven (37), Thirty-eight (38), Forty (40), Forty-two (42), Forty-seven (47), Fifty-two (52), Sixty-two (62), Sixty-three (63), Seventy-one (71), Seventy-three (73), Seventy-four (74), Seventy-six (76), Eighty-four (84), Eighty-five (85), Eighty-six (86), Eighty-seven (87), One Hundred and Seven (107), One Hundred Nineteen (119), and One Hundred Eighty-eight (188), all situated in the Tenth District and Second Section.

Also original land lots Ninety-two (92), One Hundred Ninety-six (196), Three Hundred and Nine (309) and One Hundred and Ten (110) acres of lot number One Hundred and Ten (110), all situated in the Eleventh District and Second Section.

Also original land lots numbers Forty-nine (49), Eighty-three (83), Eighty-four (84), Ninety-eight (98) all situated in the Twenty-fourth District and Second Section.

Also original land lots numbers One Hundred Seventy-six (176), One Hundred Seventy-nine (179), One Hundred Eighty-three (183), One Hundred Ninety-nine (199), Two Hundred Thirty-two (232), Two Hundred Thirty-five (235), Two Hundred Forty (240), Two Hundred Forty-one (241), and Two Hundred and Seventy-eight (278), all situated in the Twenty-fifth Dis-
640 trict and Second Section.

Also original land lots numbers Fourteen (14), Fifteen (15), Sixteen (16), Twenty-two (22), Twenty-six (26), Forty-eight (48), Forty-nine (49), Fifty (50), Fifty-three (53), Fifty-five (55), Fifty-six (56), Fifty-seven (57), Fifty-nine (59), One Hundred Thirteen (113), One Hundred Fourteen (114), One Hundred Fifteen (115), One Hundred Sixteen (116), One Hundred Eighteen, One Hundred Forty-nine (149), One Hundred and Fifty (150), all in the Twenty-sixth District and Second Section. All the above original land lots being fee lands and each containing One Hundred and Sixty (160) acres, more or less and all lying and being in Gilmer County State of Georgia.

Also original land lots numbers Eighty-three (83), Eighty-seven (87), Ninety-five (95), Ninety-six (96), One Hundred Twenty-one (121), One Hundred Twenty-two (122), One Hundred Thirty-three (133), One Hundred Fifty-seven (157), and Eighty acres more or less of land lot number Ninety-four (94), all situated in the seventh District and Second Section.

Also original land lots numbers One Hundred Ten (110), Two Hundred Nineteen (219), Two Hundred Thirty-six (236), and One Hundred and Fifty-eight (158) acres more or less of number One

Hundred and Ninety-seven (197), all situated in the Eighth District and Second Section.

Also original land lot number One Hundred Forty-four (144) in the sixth District and First Section.

Also original land lots numbers Sixty-six (66), Sixty-seven (67), Seventy-four (74), Seventy-five (75), Seventy-six (76), One Hundred and Eighty (180), One Hundred Eighty-two (182), One Hundred Eighty-three (183), Two Hundred Eighty-six (286), Two Hundred Eighty-nine (289), Three Hundred Fifteen (315), and Three Hundred Nineteen (319), all situated in the Ninth District and second section.

Also original land lots numbers Three (3), Four (4), Five (5), Seven (7), Nine (9), Ten (10), Fourteen (14), Nineteen (19),
Twenty (20), Twenty-one (21), Twenty-two (22), Twenty-
641 nine (29), Thirty (30), Thirty-one (31), Thirty-two (32),
Thirty-three (33), Thirty-four (34), Thirty-five (35), Thirty-six (36), Thirty-nine (39), Forty-seven (47), Forty-nine (49), Fifty-one (51), Fifty-three (53), Fifty-eight (58), Fifty-nine (59), Sixty-one (61), Sixty-two (62), Sixty-four (64), Seventy-one (71), Seventy-three (73), Seventy-four (74), Seventy-five (75), Seventy-eight (78), Ninety (90), Ninety-three (93), Ninety-six (96), Ninety-nine (99), One Hundred (100) and One Hundred and Five (105), all situated in the Twenty-seventh District and Second Section.

Also original land lots numbers Sixty (60) and Forty acres more or less of lot number Five (5), One Hundred and Ten (110) acres more or less of original land lot number One Hundred and Fifteen (115), and Sixty (60) acres more or less of land lot Two Hundred and Thirty-seven (237), all situated in the Seventh District and First Section.

Also original land lots numbers One Hundred Thirteen (113) in the Eight- District and First Section. All of the foregoing being and lying in Fannin County, State of Georgia, and containing One Hundred and Sixty (160) acres more or less, and being fee lands.

Also original land lots numbers One Hundred Three (103), One Hundred Four (104), One Hundred six (106), One Hundred Seven (107), One Hundred Eight (108), One Hundred Nine (109), One Hundred Ten (110), One Hundred Eleven (111), One Hundred Thirteen (113), and One Hundred Forty-one (141), all in the Twenty-fifth District and Second Section.

Also original land lots numbers Fifty (50), Fifty-nine (59), Eighty-seven (87), Ninety-three (93) Ninety-four (94), Ninety-five (95), One Hundred Eighteen (118), One Hundred Twenty-four (124), One Hundred Twenty-nine (129), One Hundred Thirty-three (133), One Hundred Thirty-four (134), One Hundred Thirty-five (135), One Hundred Thirty-six (136), One Hundred Forty-nine (149), One Hundred Fifty (150), One Hundred Fifty-one (151), One Hundred Fifty-three (153), *One Hundred* One Hundred Fifty-five (155), One Hundred Fifty-six (156), One Hun-
dred Seventy-one (171), One Hundred Seventy-five (175),
642 One Hundred Seventy-eight (178), One Hundred Eighty-seven (187), One Hundred Nineety (190), One Hundred

Ninety-five (195), One Hundred Ninety-six (196), Two Hundred Five (205), Two Hundred Ten (210), Two Hundred Eleven (211) Two Hundred Eighty-five (285), Two Hundred Eighty-six (286), Three Hundred Four (304), Three Hundred Six (306), Eighty (80) acres more or less of number Two Hundred Seventeen (217), Eighty (80) acres more or less of number Two Eighteen (218), all situated in the Twenty Sixth District and Second Section.

Also original land lots numbers One Hundred Twelve (112), One Hundred Thirteen (113), One Hundred Eighteen (118), One Hundred Nineteen (119), One Hundred Twenty (120), One Hundred Twenty-one (121), One Hundred Twenty-six (126), Two Hundred Forty-three (243), and Two Hundred Seventy-three (273), all in the Twenty-seventh District and Second Section. All the above being situated in and lying in Murray County, State of Georgia, and each containing One Hundred and Sixty (160) acres more or less, and being fee lands.

Also original land lots numbers Two Hundred Forty (240), Two Hundred Forty-one (241), Two Hundred Forty-three (243), Two Hundred Forty-five (245), Two Hundred Fifty-three (253) Two Hundred Fifty-six (256), and Two Hundred and Fifty-seven (257), all situated in the Sixteenth District and First Section.

Also original land lots numbers One Hundred Fifty-one (151), One Hundred Ninety-seven (197), and Two Hundred and four (204), situated in the Seventeenth District and First Section.

Also original land lots Twenty-five (25), Sixty-six (66), Two Hundred Forty-nine (249), Two Hundred Seventy-three (273) and Two Hundred and Eighty-seven (287) situated in the Eighteenth District and First Section.

Also original land lots numbers Fifty-six (56), Fifty-eight (58), Seventy-three (73), Eighty-six (86), Ninety-one (91), Ninety-six (96), Ninety-nine (99), One Hundred Two (102), One Hundred Seventeen (117), One Hundred Twenty-two (122), and One
643 Hundred and Twenty-four (124), all being and lying in the Nineteenth District and First Section, and each lot containing One Hundred and Sixty (160) acres more or less, and all the foregoing being and lying in Towns County, State of Georgia, and being fee lands.

Also original land lots numbers Two Hundred Twenty-seven (227), Two Hundred Forty-three (243), Two Hundred Seventy-nine (279), and Two Hundred Ninety-two (292), all situated in the Sixth District and First Section.

Also original land lots numbers Fifty-seven (57), and Fifty eight (58) in the Seventh District and First Section.

Also original lands lots number One Hundred Twenty-eight (128), in the Ninth District and First Section.

Also original land lots numbers Two Hundred Thirty-two (232) Two Hundred Sixty-nine (269), Two Hundred Seventy-one (271) and Two Hundred and Eighty-seven (287), in the Tenth District and First Section.

Also original land lots numbers Forty-three (43), One Hundred

Forty-five (145), One Hundred Fifty-five (155), Two Hundred Thirteen (213), Two Hundred Sixteen (216), Two Hundred Sixty-three (263), Two Hundred Ninety (290), Three Hundred Eighty-five (385), Four Hundred Seventeen (417), Four Hundred Twenty-three (423), Four Hundred Forty-five (445), Four Hundred Fifty-seven (457) Four Hundred Ninety-five (495), Five Hundred Nineteen (519), Five Hundred Twenty-Seven (527), Five Hundred Sixty-four (564), Five Hundred Seventy-six (576), Five Hundred Ninety (590), Six Hundred Forty-eight (648), Six Hundred and Sixty-two (662), Seven Hundred Eighty (780), all in the Eleventh District and First Section.

Also original land lots numbers Sixty-nine (69), One Hundred and Eighty (180), One Hundred and Ninety-three (193), Two Hundred and Sixteen (216), and Two Hundred and Thirty-eight (238), in the Sixteenth District and First Section.

Also original land lots numbers Three Hundred and
644 Twelve (312), and Three Hundred Fourteen (314), in the Seventeenth District and First Section. All of the above situated in Union County, State of Georgia, and are fee lands.

Also one undivided one fourth interest in the following original land lots numbers One Hundred and Seventy-five (175), Two Hundred and Thirty-one (231), in the Seventeenth District and First Section, and numbers Eighteen (18), Twenty-three (23), and Two Hundred and Nine (209) in the Eighteenth District and First Section and numbers Eighty-four (84), and One Hundred Eighteen (118) in the Nineteenth District and First Section. All of the foregoing being any lying in Towns County, Georgia, and each lot containing One Hundred and Sixty (160) acres more or less.

Also a one fourth undivided interest in the following lands: Land lot number (90) in the Seventh District and First Section, land lot number One Hundred and Sixty-seven (167), in the Ninth District and First Section, land lots numbers Ninety-five (95) and Three Hundred (300) in the Tenth District and First Section, also land lots numbers One Hundred Seventy-one (171), Three Hundred Fifty-eight (358), Three Hundred Sixty-five (365), Four Hundred Thirty-three (433), Five Hundred Fifty-six (556), Five Hundred Fifty-seven (557), Five Hundred Fifty-nine (559), Six Hundred Sixty-three (663), Six Hundred Sixty-six (666), Six Hundred Seventy-eight (678), Eight Hundred and Four (804), Eight Hundred and Seven (807), all in the Eleventh District and First Section, Also lots numbers Thirty-five (35), and Two Hundred Fifteen (215), in the Sixteen District and First Section. Also land lots numbers Two Hundred and Twenty-five (225), Two Hundred and Fifty-five (255), all situated in the Seventeenth District and First Section and being and lying in Union County, State of Georgia.

Also al- the Walnut trees, all the Hickory trees above eight (8) inches in diameter, and all the Poplar, Lynn, Ash, Pine, Whiteoak, Redoak and Chestnut-oak trees, fourteen (14), inches and upward in diameter, which are not included and covered by the
645 Duckett contracts and options, and which are not especially excepted of record on and covering original land lots num-

bers Two (2), Three (3), Thirty three (33), Thirty-four (34), Thirty-five (35), Thirty-six (36), Thirty-seven (37), and Thirty-eight (38), all in the Sixth District and Second Section. Also original land lots numbers Three Hundred Seventeen (317), Three Hundred Eighteen (318) Three Hundred Nineteen (319), Three Hundred Twenty (320), and three Hundred and Twenty-one (321), in the Seventh District and Second Section. Also lots numbers Sixty-eight (68), Seventy (70), Seventy-eight (78), Seventy-nine (79), One Hundred Two (102), One Hundred Three, One Hundred Four (104), One Hundred Fifteen (115), One Hundred Thirty-eight (138), One Hundred Thirty-nine (139), One Hundred Forty-one (141), One Hundred Forty-six (146), One Forty Eight (148), One Hundred Fifty (150), One Hundred Forty Nine (149), One Hundred Fifty-one (151), One Hundred Seventy-four (174), One Hundred Seventy-six (176), One Hundred Seventy-nine (179), One Hundred Eighty-one (181), One Hundred Eighty-two (182), One Hundred Eighty-three (183), and Two Hundred and Fourteen (214), all in the tenth District and Second Section. Also original land lots numbers Nineteen (19), Twenty (20), and Fifty-three (53), in the Eleventh Doistrict and Second Section. The above diameters of timber being based as of Eighteen Hundred and Ninety (1890) the date the deeds to the same were made, executed and placed regularly of record.

Also al- the timber on one Hundred and Ten (110) acres more or less of land lot number Thirty-nine (39), in the Sixth District and Second Section, excepting therefrom the Chestnut-oak bark timber. Also an undivided half interest in and to all the timbers eight (8) inches and over in diameter on original land lot number Forty (40), and Thirty (30) acres more or less of land lot number Thirty-nine (39), both of same being and lying in the Sixth District and Second Section, said diameters being taken as of November 19th, 1890. Also all the timber on the West half of lot number Four (4), in the Sixth District and Second Section, containing Eighty (80) acres more or less. Also all the timber on the South Half of lot number
646 Thirty-three (33) in the Sixth District and Second Section, containing Eighty (80) acres more or less, and being all the timber eight inches and upwards in diameter as of November 19th 1899, excepting therefrom the Chestnut-oak bark timber. Also all the White Pine, Poplar and Oak timber except Six (6) board trees on original land lots numbers Thirty-nine (39), and One Hundred and Six (106), in the Tenth District and Second Section, to be removed before February 27th 1909. Also all the White Pine, Poplar and Oak timber on land lots numbers Sixty-nine (69) and Seventy (70) in the Tenth District and Second Section. Also all the Poplar Timber on land lots numbers Eighty-one (81) and Eighty-two (82) in the Tenth District and Second Section *Section*. Also all the Poplar and Whiteoak timber on original land lot number Eighty-three (83) in Tenth District and Second Section. Also all the Poplar and White-oak timber on Eighty acres more or less of land lot number Forty-eight (48) in the Tenth District and Second Section. Also all the Poplar and Cherry timber on land lots numbers Twenty (20)

and Fifty-three (53) in the Eleventh District and Second Section. Also all the timber on land lots numbers Two Twenty-seven (227) and Two Hundred Twenty-eight (228) and Two Hundred and Sixty-four (264). Also all the Poplar timber on land lots numbers Two Hundred and Three (203), Two Hundred and Four (204), Two Hundred and Thirty (230). Also all of the timber on Twenty-five (25) acres of land lot number Two Hundred Thirty-five (235), all the foregoing being and lying in the Twenty-fifth District and Second Section.

Also all the timber ten (10) inches and upward in diameter on Twenty (20) acres of original land lot number Sixty (60) in the Twenty-fourth (24) District and Second Section, Also all the White-oak Hickory and Poplar timber on One Hundred and Twenty (120) acres of original land lot One Hundred and Forty-five (145). Also all the timber eight inches and over in diameter on November 15th 1890 on One Hundred (100) acres more or less of original land lots numbers Two Hundred and Twenty-two (222) and
647 Two Hundred and Forty-six (246). Also all the Hickory, Poplar, Lynn, Maple, Walnut, Pine, White-oak and Red-oak trees Twelve (12) inches and upward in diameter on June 1st 1894, on One Hundred and Fifty (150) acres more or less of original land lot number Two Hundred and Twenty-two (222). Also all the Chestnut and other timber not included in Duckett Contract on Eighty (80) acres more or less of original land lot number Two Hundred and Sixteen (216). Also all the timber excepting Chestnut on One Hundred Sixty (160) acres of original land lot number Two Hundred and Fifteen (215), and Eighty (80) acres more or less of original land lot number One Hundred and Eighty-two (182), All of the foregoing being in the Seventh District and Second Section. Also all the timber on original land lot number One Hundred Thirty-seven (137) in the Twenty-sixth District and Second Section. All of the above being located and situated in Gilmer County Georgia, and covering certain varieties of timber only, and for a more specific description reference is made to the records in the Superior Court Clerk's office Gilmer County, Georgia.

Also all the Lynn, Poplar, White-oak, Red-oak and Chestnut-oak trees twelve inches and upward in diameter in 1896 on original land lot number Eighty-eight (88), and Eighty (80) acres more or less of original land lot number Fifty-seven (57), all situated in the Seventh District and Second Section of Fannin County, Georgia.

Also all the timber on land lots numbers One Hundred and Fourteen (114), One Hundred and Thirty-nine (139), One Hundred and Forty (140), One Hundred and Forty-three (143), One Hundred Forty-six (146), One Hundred Forty-eight (148), One Hundred Forty-nine (149), and One Hundred and Fifty (150), all in the Twenty-fifth District and Second Section, all to be removed by or before June 30, 1909, Also all the timber on original land lot number One Hundred and Thirty-seven (137), and all the timber on Fifty (50) acres of original land lot Two Hundred Thirteen (213), The foregoing being in the Twenty-fifth District and Second

Section, the timber on the Fifty (50) acres of original land
648 lot number Two Hundred Thirteen (213) to be removed by June 11th 1918, and all of the foregoing lying and being in Murray County, Georgia.

Also some Thirty-five Thousand (35,000) acres of timber, options and contracts, more or less, known as the "Duckett Options", covering certain varieties and species of timber on the lands all regularly recorded in the Clerk of the Superior Court's office, Ellijay, Gilmer County, Georgia and for further reference the said records are referred to wherein the above are more fully, completely and minutely set out and described. Also some Ninety-six Hundred and Thirty (9630) acres same options and contracts in Fannin County, Georgia, Also some Forty-three Hundred and Ninety (4390) acres more or less of the same in Pickens County, Georgia, all of which may be more fully defined and described by referring to the said records of said Superior Court's Clerk's office.

To have and to hold the said bargained easement, rights and privileges with all and singular, the rights, members and appurtenances thereof to the same being, belonging or in any wise appertaining to the only proper use, benefit and behoof of the said party of the second part its successors and assigns forever. And the said Lumber Company, party of the first part, for itself and its successors and assigns does hereby covenant to, and with the said Copper Company, party of the second part, its successors and assigns, that it is lawfully seized in fee simple of the lands hereinbefore described as its lands in fee, and that it has full power, right and authority to convey the said lands, and that it will forever warrant and defend the said bargained lands and the easements covering the same and the title thereto unto the said party of the second part, its successors and assigns, against the lawful claims of all persons whomsowver.

In witness whereof the said party of the first part has hereunto caused to be affixed its corporate seal and caused this Indenture to be executed by its President, by direction and authoritv of its Board of Directors.

[CORPORATE SEAL.] SHIPPEN BROS. LUMBER CO.,
By WILL H. SHIPPEN, *President.*

649 Attest:
FRANK E. SHIPPEN, *Secretary.*

Signed, sealed and delivered in the presence of:
ALMA LEVY,
[NOTARIAL SEAL.] JAMES E. FORGARTY,
Notary Public, Fulton County, Ga.

STATE OF GEORGIA,
County of Fulton:

On this 1st day of May, 1908, before me the undersigned authority, personally appear, Will H. Shippen, with whom I am personally acquainted and who by me being duly sworn says that he

resides at Ellijay, Gilmer County, Georgia, that he is President of Shippen Brothers Lumber Company, a corporation described in, and which executed the foregoing instrument: that he knows the corporate seal of said corporation; that the seal affixed to said instrument was such corporate seal and that the same was affixed thereto by orders of the Board of Directors of said corporation, and by vote of the majority of the stockholders of said corporation, and that he signed his name thereto by like authority.

[NOTARIAL SEAL.] JAMES E. FORGARTY,
Notary Public, Fulton County, Ga.

Recorded March 20, 1914. G. A. Curtis, C. S. C.

STATE OF GEORGIA,
Fannin County:

I, G. A. Curtis, Clerk of the Superior Court of said county—(which is a court of record), do hereby certify that the above and foregoing fourteen pages contain a true and correct copy of Easement contract from Shippen Brothers Lumber Co. to Tennessee Copper Company, as same appears of record in deed book "Z" pages 103 to 116 inclusive of the records of Fannin Superior Court.

Witness my hand and official seal of office, this 22nd day of August, 1914.

[Seal Clerk Superior Court, Fannin Co., Ga.]

G. A. CURTIS,
Clerk Superior Court, Fannin Co., Ga.

650 In the Supreme Court of the United States.

No. 1, Original.

THE STATE OF GEORGIA
v.
THE TENNESSEE COPPER COMPANY AND DUCKTOWN SULPHUR, COPPER & IRON CO., LTD.

The deposition of W. H. Shippen, given at Knoxville, Tennessee, on Friday, November 6th, 1914, by agreement of counsel for both parties to this cause, same being a continuation of deposition of this witness heretofore given in this cause at Atlanta, Georgia, on behalf of complt.

Said deposition is as follows:

(Over.)

651 Further cross-examination of W. H. SHIPPEN, a witness for the complainant, by Mr. W. B. Miller, pursuant to agreement of counsel.

By Mr. MILLER:

Q. Mr. Shippen, you gave your testimony in chief on behalf of the State of Georgia in this case some time ago, did you not?
A. I did.
Q. In which you were asked on cross examination about a contract that your Company made with the Tennessee Copper Company in New York?
A. Yes.
Q. Were you connected with the Shippen Brothers Lumber Company in May, 1907?
A. I was.
Q. You were the president of that company at that time, were you not?
A. Yes sir.
Q. At that time you wrote a letter to a Mr. Patton, advising of the success of Georgia's application for an injunction before the Supreme Court of the United States in this case, did you?
A. I do not know, in the absence of the letter. I think I would have to see that letter.

GENERAL DRAKE: I except to the question, for the reason that if there is such a letter it would be the best evidence, and as immaterial and irrelevant, and original evidence in this cause.

Q. Well, I have a certified copy of your letter that you wrote addressed to "My dear Mr. Patton", from Ellijay, Georgian, on May 15, 1907, and I pass it to you and will ask you to examine that and then say if you do not recognize that, sir, as a copy of the letter that

has been recently filed in litigation in Atlanta to which you are a party, and your company is a party?

652 GENERAL DRAKE: I except to any certified copy of any letter, or any statement or evidence relating thereto, for the reason that it is immaterial and original evidence in this case, if competent for any purpose.

A. I cannot tell you a thing about that, Mr. Miller, in the absence of that letter. This letter here is dated May 16, 1907. That is seven years ago or more.

Q. Mr. Shippen, are you cognizant of the fact that a suit has been brought against the Shippen Brother- Lumber Company by Charles E. Russell, et al., recently in the United States District Court of Atlanta?

A. I am.

GENERAL DRAKE: I except to this question and answer, because irrelevant and immaterial.

Q. Have you not made as many as half a dozen affidavits, and filed them in that case recently?

GENERAL DRAKE: I except to that for the same reason.

A. I have made several affidavits. I do not remember just how many?

Q. In that case, have you not, very recently?

A. Yes.

Q. And have you not seen the original of this letter written by you and addressed "My dear Mr. Patton" on file in that case, and read it?

A. I have not.

Q. Do you not know it was filed in the case?

A. I heard of some letter that was brought in after that case had been submitted and argued.

GENERAL DRAKE: I except to all that evidence as wholly irrelevant and immaterial.

Q. Who is the addressee of that letter, "My dear Mr. Patton"; what Patton was that?

A. I cannot tell you.

Q. Do you mean to say there was one of your stockholders that you were on sufficiently intimate terms with to address him
653 as "My dear Mr. Patton", and you do not know who he was?

GENERAL DRAKE: I except to the question, for the reason that there is no evidence that there is any "My dear Mr. Patton", a stockholder of Shippen Brothers Lumber Company, and as immaterial.

A. There are three Pattons, in fact, there are five or six Pattons who are stockholders of Shippen Brothers Lumber Company.

Q. I will read this letter into the record:

(Reading:)

"Shippen Bros. Lumber Co., Manufacturers of Band Sawn Lumber.
Specialties, Yellow Poplar Bevel Siding & Mouldings.
Poplar, White Pine and Oak.

W. H. Shippen, Pres. & Gen'l M'g'r; James Mitchell, Vice Pres.;
Fred Joyer, Treas.; F. E. Shippen, Sec'y.

Office and Store, Ellijay, Ga.,

May 16, 1907.

MY DEAR MR. PATTON: I have just reached home having stopped enroute. While in Cincinnati Tuesday, I had the following repeated from Ellijay: 'Superior Court Clerk, Washington, wires 'Hart injunction suit gained', when I wired you as follows: 'Supreme Court Clerk wires copper company injunction granted', which I herewith confirm. Am also handing you a clipping from Atlanta Constitution, which shows we have all we asked for. Judge Hart gives me full credit for the whole, and as to what the other side think of my efforts in the matter, would like for you to ask the attorneys of the copper company. By the way, it might be well for you to drop in on Martin Vogel, 170 Broadway, the next time you are in New York and feel him. You know nothing of the case, and see what he says. We ought to be losing no time now in going for damages in earnest, as our case is now made out. In addition, I consider the Shippen Brothers Lumber Company worth 25% more today
654 than it was with this thing going on. Now the stockholders have said little of the victory, but if they don't call this results, would like to know what name they have for it.

I thought about giving Mitchell and D. this information, while they were dickering with me about the sale of their stock, but it did not take me many moments to decide that I would not be doing the fair thing to withhold this information that came to me in my capacity as an officer of the company to work against them for my own private gain, so gave them the information in full, and am much surprised to relate they never seemed to see the point, and I never thought it incumbent on me to point it out to them at this particular time. Now it is my decided opinion that I should get busy at once and see what can be done about settlement of our claim with these people, and I am of opinion that they would settle with us promptly to get me out of the way and use my action to control the others who have claims against them. I should see their attorneys in New York at once, but cannot leave here with things in the shape they now are. Now, as to Mitchell, I am firmly of opinion that he and D have an understanding about their holdings, and one will hardly sell without the other. I am further of opinion they *that* both have been kicking up the rumpus and appeaing on side of the enemy in a hope to force a purchase. I did not have to hunt them about a purchase, they hunted me, and I had a time getting with Mitchell alone. When I finally did, I found him the toughest proposition to pin down to earth and keep on a subject I have ever been up against. He held out stiff for $50,000. When he saw

Dyer, they offered to take par for both interests. I was with M about all day and they only agreed to this at the depot just as I took train, and I wired you from Falmouth enroute as follows: 'Could have bought both interests or the one not wanted. Will write enroute Ellijay', which I herewith confirm. Now if you can shortly get Mitchell to Philadelphia or some other place, or find when he is to be there and let me meet him there without D, I feel
655 sure I can buy his stock alone and for something less than par. Of course such meeting must apparently be accidental on my part. I offered one-third cash and notes at one and two and five per cent for the balance with their stock for collateral if I bought, and they were satisfied at this. Please let me hear from you promptly on above. I think we should do business. Your uncle is sore and combed both you and I repeatedly. When he had the Supreme Court news, he remarked, it would not pay dividends. Now please do not repeat this to him, for I do not want to widen any breach.

Field told all over here that Frank and I were to be fired out at Cincinnati and was over twice during our absence for information that I hear he did not get. I may hear further from M and D, and with kind regards, I am,

Sincerely yours,

(Signed) WILL H. SHIPPEN.

I pen this as it is only for you and I fear to risk it through stenographer."

GENERAL DRAKE: I except to all this letter as being irrelevant and immaterial in this case.

Q. Now, Mr. Shippen, having heard that letter read, do you recall having written it?

A. I do not.

Q. You do not recall having written any such letter at any time?

A. No sir, I do not.

Q. Do you say that you did not write it?

A. I do not say anything of the kind. If I saw the letter I could answer you very quickly.

Q. And you say you do not know it had been filed in Atlanta?

A. No, I did not say that. I said there was a letter which was brought in there after the case had been—all the affidavits—the case was brought on affidavits—after all the affidavits had
656 been filed and argument had been begun and the case closed.

Q. Well, did you state at any time to either of the Mr. Pattons that you knew that Judge Hart who was at that time the Attorney General of Georgia, did give you credit for having won the controversy on behalf of the State of Georgia in this case?

A. I don't know that I did, but I do know that I did considerable work in that case. I worked on it pretty hard.

GENERAL DRAKE: I except to all of the evidence, as being irrelevant and immaterial.

Q. Did you succeed in buying this Mitchell and D stock that is talked here about in this letter?

GENERAL DRAKE: I except to that, for the reason that it is immaterial.

A. On advice of counsel, I decline to answer that as immaterial and irrelevant to this issue and affecting my private interests.

Q. What counsel did you refer to, on *whee* advice you are acting?

A. Counsel for the State of Georgia.

Q. That is Mr. Hill, who is here present associated with Mr. Drake?

A. Yes sir.

Q. He suggested that answer to that question, did he not?

A. He did.

Q. So you decline to answer that?

A. I decline to answer that.

Q. Well, now, you were president of Shippen Brothers Lumber Company on March 27, 1908, were you not?

A. I was.

Q. And at your suggestion there was a special meeting of your company called for the Manhattan Hotel, in the City of New York, on March 27th, 1908?

A. March 27, 1908? Yes.

657 Q. And you were present at that meeting?

A. Part of the time.

Q. The fact is that you signed the record as president of that meeting, the minutes?

A. I did.

GENERAL DRAKE: I except to all that evidence as being immaterial and irrelevant to the issues in this law-suit.

Q. Have you got a copy of those minutes?

A. I have.

Q. You have it with you, have you not?

A. I have.

Q. As I read from the paper that I have, let us see if you can verify it, and if so, I will ask you to file this one: (Reading:)

"Record of minutes of a Special Called Stockholders' meeting of the Shippen Brothers' Lumber Company of the city of Ellijay, Georgia, held by order of —— —— at Manhattan Hotel, in New York City, March 27, 1908.

Q. The meeting was called for the purpose of discussing settlement of claim for damages of this corporation against the Tennessee Copper Company.

"The following stockholders being present in person: James Mitchell, Fred J. Dyer, C. E. Patton, C. S. Russell, W. S. Reed, W. H. Shippen, James A. Drake, and the North Georgia Lumber Company by James A. Drake, President, also F. E. Shippen by proxy by W. H. Shippen, and H. J. Shippen by proxy by C. S. Russell. The same being all the stockholders of the Shippen Brothers' Lumber

Company. The usual notice of call for said meeting being waived by all stockholders. A general discussion ensued as to this corporation's claim against the Tennessee Copper Company. Mr. W. H. Shippen stated that he had been asked by the representatives of the Tennessee Copper Company to meet them in New York to discuss
658 settlement of this corporation's claim against the Tennessee Copper Company, that in pursuance of such request, did meet Mr. Martin H. Vogel, their counsel, in the matter, and on being asked by Mr. Vogel the amount of our claim, that he had asked and demanded $200,000 in compensation of this corporation's damages to date, that on hearing this amount Mr. Vogel stated that he was excessive in his demands, and that he did not represent the ideas of his stockholders and directors, and that he (Vogel) could settle with the others for a very small part of this figure, and that Mr. Vogel further stated that he had been approached by one of our party who had suggested to him a figure of $30,000.

Mr. Shippen stated that he had assembled the meeting to learn the stockholders' pleasure in the matter. It was decided to have Mr. Vogel come before the meeting and discuss at length the matter between us, and he accordingly appeared before our body and went into the matter between his corporation and ours, and asked our corporation to submit an offer. After Mr. Vogel left the meeting, Mr. Shippen stated that he had always asked the Tennessee Copper Company $200,000 and had never named a lower figure than this to them, and it was his opinion that this corporation should ask at least $100,000 in satisfaction of our damages to date, and that any offer should be to date and leave any future damages open. The discussion that ensued developed the fact that there was great diversity of opinion on this question among the various stockholders present, and that Mr. Shippen stated that he had now had his say and would retire and let the other stockholders present decide the matter themselves and would concur in anything that they might do. Mr. W. H. Shippen did retire and the following was the result of the deliberation.

It was unanimously voted that Mr. F. J. Dyer be authorized to report to the Tennessee Copper Company that in consideration of Fifty-Thousand Dollars this corporation will release it, the Tennessee
659 Copper Company, from all claims for damages and grant to it an easement permitting it to allow smoke and gas from its furnaces to pass over and on our lands at all future times, free from any claim for damages, and in case of the acceptance of this offer the president, W. H. Shippen, be and is hereby authorized to execute such a release, grant an easement leaving terms of payment of said Fifty Thousand Dollars to be adjusted by Mr. W. H. Shippen and Mr. F. J. Dyer. As the above was the conclusion of this meeting, Mr. W. H. Shippen for himself and by proxy for F. E. Shippen, fully concurred in the same.

W. H. SHIPPEN,
Pres. & Chairman."

Now that is a correct minute of the meeting which you prepared and signed, is it not?

A. Well, that is practically so; there are one or two little changes that do not cut any figure.

GENERAL DRAKE: I except to the minutes, and the question and answer, for the reason that it is immaterial and irrelevant, and seems to be introduced for no other purpose than attempting to impugn the motive of the State of Georgia in this case; and for the further reason that it appears to be a fishing venture to discover evidence in a law-suit that is now pending in Atlanta between some private individuals.

Mr. MILLER: It may have that appearance to you, but I disclaim any such intention with regard to the letter. I have no connection with the Atlanta litigation. It is only in connection with this case that we offer it.

Q. Pursuant to the minute which I have just read, your company, through you, did enter into a contract with the Tennessee Copper company while you were in New York on that trip, and that contract was dated April 1st, 1908?

A. I think there was such a paper. That paper, as I remember, was filed in escrow in some bank or trust company in New York City.

Q. Were you not aware, Mr. Shippen, that that contract has been filed in the Atlanta litigation, and is a public record now of the United States District Court in Atlanta?

660 A. Well, no, I am not; I have not seen those papers.

GENERAL DRAKE: I wish to make a general exception to all this evidence in regard to any papers that may be filed in the law-suit referred to, as the law-suit in Atlanta, or any contracts or letters that might have passed between Shippen Brothers' Lumber Company and any stockholders of that company, or any correspondence in connection therewith, as irrelevant and immaterial.

Q. Have you not, on behalf of your company, recently filed in this Atlanta litigation, your minute book—the minute books of your company?

A. I think the minute book was filed there.

Q. And in that way, only, as far as you know, that is by getting a copy of it, could counsel who is now cross-examining you have had a copy of that minute.

A. I don't know what your connections are, but the Tennessee Copper Company owns stock in our concern, and you might have gotten it through them.

Q. But you took good care to never let it creep into this record that the Tennessee Copper Company owned any stock in your company until it was brought out since your examination was given in this case before?

General DRAKE: I except to the form of that question, and also for the reason that it is immaterial and irrelevant.

A. The only reason on the face of the earth I had for keeping that quiet was at their earnest request. I did so for fear. I did so for fear the Georgia claimants would get jurisdiction in the State of Georgia for their claims against the Tennessee Copper Company and attach our stock.

Q. So you did keep the ownership of the stock in your company by the Tennessee Copper Company quiet at the instance of and for the benefit of the Tennessee Copper Company, did you not?

A. I did not make a public record of it.

Q. And you did keep that quiet because they asked you to do it?

661 A. I certainly did. I had no other reason for it.

Q. Now, you say you did make a contract in that resolution. I show you what purports to be a certified copy of that contract that you made in New York and that was acknowledged by you there, and ask you if you recognize it as such.

General DRAKE: I except to this contract, the introduction of this contract, for the reason that it is irrelevant and immaterial, or any quotations therefrom.

A. I cannot testify as to that. I know that the consideration is the same. It was $50,000, in four equal payments of $12,500 each.

Q. And the terms of payment are the same, are they not?

A. It seems so to me.

Q. Then as far as you are able to say, the paper I present you with is a substantial copy?

A. I do not know that. I have not read it over.

Q. Suppose you read it and see if you see anything in there that does not accord with your recollection of the document that you executed for your company.

A. I cannot say as to this. When this paper was executed, Judge Reed, who represented the North Georgia Lumber Company's interests in our company, was the attorney who represented the Shippen Brothers Lumber Company, or a stockholder; he was the attorney and a stockholder also, and he passed on this matter. It looks something like the paper, as far as I know, but I read it very hurriedly at the time, and I have not seen it since. The amounts are correct.

Q. And you did acknowledge the document before a notary there in New York?

A. That is my recollection, I acknowledged the document which was placed in escrow, and I have not seen that document from that day to this.

Q. And that was signed by the Tennessee Copper Company, signed on behalf of the Tennessee Copper Company by its then president, Mr. J. Park Channing, was it not?

662 A. I do not recall that.

Q. You say you have not seen that paper from that day to this?

A. I have not.

Q. Did you not know it was filed in the litigation in Atlanta previously referred to?

A. No sir, I did not. I never read all the papers filed there. My attorneys handled that matter.

Q. Now, instead of that contract being executed very hurriedly, as you say, in New York did you not, on behalf of your company and as its president, immediately after the contract was signed, sign and endorsement at the foot of it in these words: "It is hereby agreed pursuant to letters between the parties hereto that the closing of the within contract is adjourned to May 1st, 1908, at ten o'clock a. m., at the Piedmont Hotel, Atlanta, Georgia. This April 28, 1908."

A. I still reiterate that that contract was signed hurriedly, though conditionally. They were ready to return to another paper that was afterwards signed and agreed to in Atlanta. There were 1,200 deeds to be examined there and brought into that record, so that the conveyance would be in proper order, and it was postponed to that date so that information could be gotten up.

General DRAKE: I except to all the above question and answer for the reason that it is immaterial and irrelevant to this issue.

Q. No, instead of it being necessary to examine 1,200 deeds, it was necessary to consummate a purchase of certain stock in your company between you and the Tennessee Copper Company, and was that not the reason for the adjournment?

A. That is absolutely false. There is not one word of truth in it.

Q. Do you mean to say that it was not a part and parcel of the same arrangement whereby the $50,000 contract was made, that you and your brothers were to sell certain stock in your company to the Tennessee Copper Company?

663 A. Not a word of that is true.

Q. You did not do anything like that?

A. You say that was a part of this contract? It absolutely was not.

Q. I say, did you do anything like that?

A. Like what? What are you talking about?

Q. Making a sale of certain stock in your company, you and your brother, to the Tennessee Copper Company, in consideration of this $50,000 contract being signed?

A. No sir.

General DRAKE: I except to the question for the reason that it is immaterial and irrelevant and could not in any way reflect light on the issue in this case.

A. (cont'd) And again, now, about the stockholders' meeting there that you have the minutes of: My brother and myself owned one-third of the stock of our company; we were not in control; and I did everything in my power, as I testified heretofore, to prevent my company from executing that contract with the Tennessee Copper Company at the figure at which it was executed. We had a perfect row in our meeting there. I insisted that we not make any settlement with them at all, that we grant an easement in that property at no figure less than $100,000, which should be named for the dam-

ages at that time, but they thought differently, and after I left them and came back into the meeting they had suggested the figure of $25,000 for the damages, and I insisted on their raising that figure and finally got them to raise it to $50,000.

You speak of the sale of that stock after this arrangement had been made on April 3rd, I think it was, or sometime thereafter. I sold the Tennessee Copper Company certain shares of stock we had in our company at that time. That had nothing whatever to do with the transaction that you are now speaking of.

664 Q. In other words, the Tennessee Copper Company was looking for a substantial investment, and they bought this stock in your company without any regard whatsoever to the contract made just three days before between your company and them?

A. The contract that they made with our company at that time I think gave them an easement on the Shippen Lumber Company for all time, from the paper that you have just presented me, and I should think they would be very foolish, after they bought a thing once to buy it again.

General DRAKE: I except to all that evidence, as being irrelevant and immaterial.

It is stipulated that the General Drake re[illegible]red to who is interested in the Shippen Lumber Company, is [illegible] General J. A. Drake, counsel in this case.

A. (cont'd): In further answer to Mr. Miller's question as to what may have operated in the minds of the officials of the Tennessee Copper Company to cause them to purchase the stock of the Shippen Brothers Lumber Company, will say I have no idea.

Q. You tell us that you have absolutely no idea?

A. I have no idea at all. They bought the stock and paid for part of it.

Q. What was stock in Shippen Brothers Lumber Company then selling for on the market?

A. I do not know of any sales being made. It is a close corporation; it is not quoted on the market, but the stock of Shippen Brothers Lumber Company at that time was worth $200 easily, on the books.

Q. But what did you pay for it? You bought some at that time?

A. I did not buy any at that time.

Q. I just asked you if you did not buy what was known as the Mitchell and D stock in that letter, and you declined to answer.

General DRAKE: I except to the question as an inference of what the transaction in stock of the Mitchell and D was at this time, and the facts are, as I understand them, from the

665 answers heretofore made, that it was at an entirely different time; and further for the reason that it is immaterial to the issues in this law-suit.

Mr. HILL: That same question is in the record, and the witness answered it.

Q. In other words, this is one that you declined to answer on the advice of counsel?

A. Yes, because some question is pending in another court, as will be brought out there.

Q. Well now, that contract about the sale of your stock which you say was made with the Tennessee Copper Company, was in reality in order to cover up the transaction, the true transaction was made in the name of a man named Oscar B. Van Sant?

A. Well, now, as to that, I can only give an opinion, I do not know why it was done. The paper itself shows what it is.

Q. Did you know that paper had been recently filed in the Atlanta litigation?

A. I have not seen it or heard — it.

Q. Now, I show you what purports to be a certified copy of that document signed by William H. Shippen and Frank E. Shippen by William H. Shippen, Attorney and Oscar B. Van Sant, of date April 3rd, 1908, and will ask you if you recognize that as a substantial copy of the contract by which you and your brother sold to Mr. Van Sant something over 1500 shares of stock in your company?

A. We had a contract with Oscar B. Van Sant to sell certain stock in our company. I do not carry that in my head. I do not know whether that is a correct copy of it, or not.

Q. You are not prepared to say that it is not?

A. No, I am not. I haven't anything here to compare it with.

Q. As far as you know or are prepared to answer, this is a substantial copy, is it not?

A. No, I would not say that.

Q. Do you say there is anything in this paper that does
666 not appear on the one which you signed?

A. Let me have the paper. This looks like it, and if it is a certified copy, I guess it is correct.

General DRAKE: I except to it as being irrelevant and immaterial.

Q. I notice on this certified copy that I have passed to you an endorsement in these words: "The Tennessee Copper Company guarantees the full performance of the above contract on the part of the party of the second part." Now, the Tennessee Copper Company did guarantee its performance by Mr. Van Sant, did it not?

A. I understand so.

Q. And lest the Tennessee Copper Company might not have the power or authority to execute such a guarantee, Mr. Frederick Lewisohn, at that time a large stockholder in the Tennessee Copper Company, signed an endorsement on the same paper in these words: "I hereby guarantee that the Tennessee Copper Company has the legal power to guarantee the above contract, and that the same is a legal and binding guarantee as to the Tennessee Copper Company." That is true?

A. Frederick Lewisohn did guarantee that paper in some such language, as I remember it.

General DRAKE: We except to all that evidence, as immaterial and irrelevant to the issues in this case.

Q. Now, on the 24th of September, 1914, in the city of Atlanta, you gave an affidavit in the case of Charles S. Russell, et al., complainants, v. Shippen Brothers Lumber Company, et al., defendants, pending in the United States District Court in the Northern District of Georgia for the Northern Division, did you not?

A. Why, I think I answered that question before; I think there were several affidavits.

667 Q. Well, I have a certified copy of that affidavit, and I want to read some of the statements therein and ask you if you recall that they are as you then gave them, and if they are correct. One is in these words:

"For years deponent with his brother labored with the other owners of timber in North Georgia, with legislators, with the legislature itself, with committees from the legislature, and different officials of the State, and in the scientific study of the character of the fumes, the extent to which they would go and the injury inflicted."

A. I certainly have.

Q. That is true?

A. That is true, absolutely.

Q. Then this: "After almost numberless appeals to the public authorities, to the newspapers, to scientific magazines, and using every influence in the world that could be brought to bear upon the situation, deponent with his brother finally got the movement into a compact, well organized condition where it presented a formidable front to the further infliction of the damage."

A. I did everything in my power to try to get that damage arrested, and I am trying to do it now.

Q. That quotation that I have read is correct?

A. It certainly is.

Q. And then this: "The State of Georgia was finally induced, almost entirely by the labors of deponent and his brother, to file a bill in the United States Supreme Court."

A. Well, that is going quite far. I think there were a great many others helped me. I don't think I want quite that much credit.

Q. But you made an affidavit recently that contained that statement, did you not?

A. If that is a certified copy of it, I suppose I did.

General DRAKE: I except to all that evidence, as irrelevant, and for the further reason that it is an attempt to impugn the motives of the State of Georgia.

668 Mr. MILLER: No, it is an attempt to explain the present litigation.

Q. Now, the litigation which that statement has reference to as having been undertaken by the State of Georgia and induced by

you and your brother, is this present case in which your deposition is being given, is it not?

A. If this is the original case brought down to date? It may be.

Q. In other words, you say that you don't know whether the case wherein you are giving your deposition is the one to which you referred in that affidavit, from which I have just read?

A. I think this case itself will answer that.

Q. I would like for you to answer it. Do you not know that you are giving your deposition in that same case now to which your affidavit referred?

A. I am asking you, is it the same case?

Q. This is the same case, if you want to know, Mr. Shippen, that was then pending, and to which the letter addressed "My dear Mr. Patton" had reference, in 1907. Now, is it not a fact that you have induced the State of Georgia to take up or bring another case in the Supreme Court, besides the one before the Supreme Court of the United States?

A. I think there was another one.

Q. Before what other court?

A. I don't remember just which court, but there was a former effort.

Q. At any rate, this is the only suit that you were successful in getting the State of Georgia to bring, which is the one before the Supreme Court of the United States; is that right?

A. It is the only case that I know of. There was another effort started there. I don't know just what became of it.

Q. I will read another sentence from the affidavit.

669 General DRAKE: I except to all that evidence as being irrelevant and immaterial.

Q. "In the preparation of the trial, deponent procured and caused to be procured thousands of affidavits, which when printed filled several volumes of printed matter as a part of the record of the litigation."

Did you ever procure thousands of affidavits in any other case except the one wherein you are giving your deposition now and which was brought in the name of the State of Georgia?

A. Yes, I got affidavits in a former case, but I do not know what became of them. I think there were two efforts made.

Q. You mean to say there were two suits brought before this in the Supreme Court of the United States?

A. I do not know how far the first effort went, but there were two efforts before the legislature. The legislature took it up once before.

Q. Mr. Shippen, when you made this affidavit less than two months ago in the City of Atlanta, to what litigation did you refer as having labored in to the extent of having procured several thousand affidavits?

A. I procured several thousand affidavits, if this is a continuation of the original case before the Supreme Court of the United States.

This case was first heard on affidavits, and I assisted in procuring thousands of those affidavits that were presented to that court.

Q. The next sentence: "He visited and traveled all over several counties of North Georgia obtaining these affidavits with reference to the existence of the smoke."

A. I did.

Q. The next sentence: "This litigation resulted in the adjudication by the Supreme Court of the United States that a nui-
670 sance existed which should be stopped."

A. Well, the records will show that.

Q. And you know now that you were referring to this present litigation, do you not?

A. That is the only one that the court passed on that I know of.

Q. The next sentence: "The litigation of course very seriously affected the two copper companies mentioned." You thought that, did you not?

A. Yes.

Q. You thought that it did seriously affect those companies?

A. I certainly did.

Q. And thereupon immediately wrote Mr. Patton to go to New York and see Mr. Vogel?

A. No, Mr. Vogel had approached me half a dozen times during the time that I was connected with the State's case, and—I don't know particularly that Mr. Vogel did, but the Tennessee Copper Company and Mr. Channing, the president of the Tennessee Copper Company—and I positively refused to listen to one word of settlement until after the State's case had been finally disposed of, and after it had been disposed of and a verdict rendered in that case, I thought, in perfect good faith, that the State of Georgia would take up the settlement of our damages against the Tennessee copper companies when they had repeatedly asked us to contract with them about a settlement, and I felt that I could not do it until the State's case had finally been disposed of, and when that was done, I thought we were at perfect liberty to take up with the copper companies the matter of our private settlement with them, which we did, and that is why we spoke of taking up the matter now and pushing it vigorously, after the State's case had been decided.

Q. The Mr. Vogel that figures in that letter and in the
671 minutes of your meeting was the general counsel of the Tennessee Copper Company, residing in New York, was he not?

A. I so understood; I have always understood that.

Q. You saw him there in New York, did you not?

A. Yes, and I saw him in Atlanta, and I saw him before the legislature there, and I saw him in our territory.

Q. And when you made this arrangement through Mr. Vogel to sell this large block of stock owned by you and your brother to Mr. Van Sant for the benefit of the Tennessee Copper Company, you then ceased your activities against the Tennessee Copper Company, did you not?

A. I ceased my activities against the Tennessee Copper Company the very minute the Shippen Brothers Lumber Company granted them an easement on its property and got my contract out of them for $50,000 for the same. It was distinctly understood and agreed there at that time at that meeting, that I was to cease my activities against the Tennessee Copper Company, as a part of the consideration.

Q. And it was agreed further that the Tennessee Copper Company might run full blast as it had been doing up to that time, without even erecting an acid plant?

A. The contract that was signed at that time with it will show.

General DRAKE: We except to all that evidence as irrelevant and immaterial.

Q. Now, subsequently, there was paid to you and your brother under this Van Sant contract, $78,000 by one Henry I. Gaskill, was there not?

A. Well, I do not know that Henry I. Gaskill paid it. We got $78,000 on March 6th, I think it was, 1913, on account of that contract.

Q. And did you not give a receipt to Henry I. Gaskill?

A. I do not recall just who the receipt was given to. I gave a receipt at the time for it, I know, as I remember.

672 Q. Was that receipt filed recently in Atlanta?

A. I do not know; I never saw it.

Q. I show you a purported certified copy of it, of date March 6th, and ask you if that refreshes you in any way about the receipt that you signed?

A. Well, I cannot recall the paper at this time. I know we gave a receipt for $78,000 and the money was paid. That was March 6th, 1913; that is the proper date.

Q. It is a very significant circumstance, and you assume it is correct, is that not true?

A. I cannot say anything to the contrary.

Q. Now, on March 6th, 1913, did not Mr. Walter M. Briggs, as treasurer, give to you and your brother a receipt for 520 shares of the capital stock of Shippen Brothers Lumber Company?

General DRAKE: I want to except to all this evidence, because irrelevant and immaterial, and for the further and especial reason that it is not in rebuttal to anything heretofore taken in this hearing.

Q. Now, in this same Atlanta litigation, you and your brother F. E. Shippen made an affidavit on the 29th of September, 1914, in the City of Atlanta, and verified it before one Zoe Davis, notary public, did you not?

A. As I testified before, Mr. Miller, we made several affidavits there. I do not recall just what.

Q. I present you now a certified copy of the following documents bound together under the seal of the Clerk of the United States District Court in Atlanta, to-wit:

Letter from Will H. Shippen to "My dear Mr. Patton", of date May 16, 1907; the minutes of the special meeting of your company held in New York on March 27, 1908; the contract between your company and the Tennessee Copper Company of April 1st, 1908; the acknowledgment thereto and the endorsements thereon to which your attention has been directed previously; the contract of sale between yourself and your brother of the one part, and Oscar
673 V. Van Sant of the other part, with the guaranties and endorsements thereon, to which your attention has been heretofore directed, and the affidavit by you of September 24, 1914, note before A. H. Bancker, a notary public of Fulton County, Georgia, from which I have read some few extracts to you, the receipt of March 6th, 1913, in favor of Henry I. Gaskill; the receipt of March 6th, 1913, signed by Walter M. Briggs, treasurer, for 520 shares of stock in your company, and the joint affidavit of yourself and your brother F. E. Shippen of date September 29, 1914, before Zoe Davis, notary Public, and I will ask you to file the same as exhibit No. 1 to this cross-examination.

General DRAKE: I except to the introduction of this exhibit and all the contracts, letters and papers therein referred to, for the reason that it is irrelevant, incompetent, and in no way rebuttal in this case. While I agree it is very interesting reading, and entertaining, I do do not think it ought to be in this record.

Mr. MILLER: I ask that it be made exhibit No. 1 to your testimony, and I will ask the commissioner to so mark it.

A. I do so attach it, without attempting to say that it is an exact copy.

Q. But if there is anything incorrect about it, you do not recognize it, do you?

A. I do not. I want to get everything exactly as it is; if you will let me examine this, and if I find anything that appears to me at this distance from the original papers to be wrong, I will call your attention to it.

Q. I will be glad to have you do that, and if you find any inaccuracy about it, to point it out before we leave.

Now, Mr. Shippen, is it not true that it was a part and parcel of the contract between you and your brother and the representatives of Mr. Van Sant or the Tennessee Copper Company, in connection with the negotiations to which I have referred in your previous examination, that you were to be retained in the position of
674 president of your company for a number of years immediately succeeding that contract?

A. The voting power of that stock that we sold was to remain in us, which gave us control.

Q. The Tennessee Copper Company entered into a contract by which you were to be retained, or at least they were to aid in retaining you as president of the company?

A. The contract itself shows that the voting power of that stock remained in us until finally paid for.

Q. And it has been very largely paid for?

A. There is some $60,000 odd due, as I remember.

Q. The balance has been paid?

A. The balance has been paid, with the exception of some $60,000 which we are now suing for, and I am perfectly sure that all this litigation that Mr. Miller has remarked about and called attention to has been brought up and instituted by the Tennessee Copper Company. I give them credit for the whole thing.

Q. That litigation was only brought in September, this last September, was it not?

A. I think that is correct.

Q. Now, up until you had a difference with the Tennessee Copper Company about paying for that stock just a few months back which culminated in that litigation, the relations between you and your company were very friendly, were they not?

A. The Shippen Brothers Lumber Company have made a contract with them to give them an easement on its property, as your paper here recites.

Q. I say your relations were very friendly?

General DRAKE: We except to all that as being irrelevant.

A. They had settled the damage for all time. I imagine that would constitute a friendly arrangement.

Q. They settled the damage for all time, and they agreed to help employ you as president of your company; that made a friendly arrangement, did it not?

675 A. They could not do otherwise, with the voting power of that stock remaining in us.

Q. You and your brother immediately bought a lot of stock on the outside, after the Tennessee Copper Company took that over through Van Sant, you bought a large lot of stock, did you not?

A. We bought some stock at that time.

Q. In other words, you sold your stock at away in excess of par, and you bought stock below par about the same time?

General DRAKE: I except to the question as irrelevant and immaterial.

Q. That is correct, is it not?

A. I will have to answer that question by refusing on the same ground as the question heretofore asked. It relates to matters that are pending in another litigation.

Q. It don't change the facts, though, if you bought the stock. Your declining to answer it is still on the advice of counsel?

General DRAKE: I object, because it is an issue in another lawsuit.

A. It is a private matter, and hasn't anything to do with this case.

Q. Mr. Shippen, during the period of years that have intervened since the Tennessee Copper Company became a very large stockholder in your company, it has been a keen competitor of the Ducktown Copper, Sulphur and Iron Company in the production and sale of copper, has it not?

A. I don't know anything about that.

Q. Don't you know they are engaged in smelting identically the same ores, and that they are selling in the same markets?

A. No sir, I think that witneses have shown that your ores are absolutely different.

Q. Is it not true, Mr. Shippen, that the Tennessee Copper Company and yourself, or your company, you, representing your company, and the management of the Tennessee Copper Company have had a definite secret agreement during the past few years, by which you were, both through your company and your labors, to harass the Ducktown Copper Company?

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A. Nothing of the kind.

Q. And is that not the spring to this very application for an injunction before the Supreme Court of the United States?

A. No sir. The Tennessee Copper Company have agreed to care for their fumes during the growing season, and they entered into a contract with the State of Georgia to that effect, and the Ducktown Copper, Sulphur & Iron Company, the present one which is before the court, has positively refused to contract with the state or to care for its fumes in any way whatsoever, and has ignored us and treated us with disdain.

General DRAKE: I want to except to the question, for the reason that it seeks to impugn the motive of the State of Georgia, which acted through its legislature and governor and attorney general in the bringing of this motion before the court, and for the further reason that it is immaterial and irrelevant.

Q. At the time of this contract with the Tennessee Copper Company for the sale of this stock by you and your brother, and at the present time, what is the capital of your company?

A. What do you mean?

Q. What is the capital stock, how many shares are there outstanding of the capital stock?

A. There are 4,560 shares of $100 each.

Q. And there were approximately that many shares at the time of this contract, and have been since?

A. That is as I understand it.

Redirect examination.

By General DRAKE:

Q. You have been asked about affidavits that you helped to procure in the original hearing of this case before the Supreme Court. I will ask you if the result of those affidavits that you obtained in this case in the Supreme Court did not decide the suit favorably to the contention of the State.

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A. I think the records will show that.

Q. I will ask you further, Mr. Shippen, if you was not just one among hundreds and thousands of people in North Georgia who were seeking to arrest this nuisance of smoke injury?

Mr. MILLER: I suggest that the question is slightly leading and suggestive,

A. The whole of that country was roused up on this question, more than I have ever seen it on any question since I have been in that State. I took a leading part in that, as much as I could, and assisted them in every way, and every person there of any note that had any property at all, and had any intelligence, was right in line with the efforts of the State and myself.

Q. Further, I will ask you if you know, that after you ceased your efforts against the Tennessee Copper Company, whether or not the citizens of North Georgia still pursued their remedy and tried to cause the cessation of that smoke?

A. They did, with the result that the Tennessee Copper Company did enter into an agreement with the State of Georgia to care for its fumes during the growing season.

Q. State whether or not the State of Georgia also offered to the Ducktown Copper Company a way by which they were to treat with the people of North Georgia, and whether or not it refused to do so?

A. It certainly did. I myself helped to prepare a resolution that was put through the Georgia legislature, offering the Ducktown Copper, Sulphur & Iron Company the same sort of a contract that we gave the Tennessee Copper Company, excepting at a very much less figure than that named for the Tennessee Copper Company, and the Ducktown Sulphur, Copper & Iron Company positively refused to give us any guarantee as to what it would do with its gas,
678 or whether it would care for its gas or do anything. It said it was not doing any damage whatsoever, but that the other company was doing it all. I further want to say that I did not want to do this company any injury, and I did not feel any more favorably inclined toward the Tennessee Copper Company than I did toward the Ducktown Sulphur, Copper & Iron Company if it had used the same efforts to care for its fumes that we believe the Tennessee Copper Company used to care for its fumes.

Q. State from what standpoint you have been acting in this case?

A. I have been acting in perfectly good faith to try to relieve the vegetation of North Georgia and stop damage from these fumes.

Q. You are a man of family. Where is your home?

A. I have a family of six, and my home is at Ellijay, Gilmer County, Georgia. In fact, almost everything I have is invested in that section. I have been vitally interested in the outsome of this case because I feel that all North Georgia is dependent on whether or not these fumes shall be stopped or arrested, or whether this damage shall continue.

Q. You were asked about a lot of stock that you have sold in your company, especially as to voting power. I will ask you if that was not put up as collateral to secure the balance of the payment, and the voting power was a part of it that you retained?

A. The contract will plainly show that the purchasers of this stock agreed to pay for it in installments extending over a period of some six years, and that this stock as paid for was to be deposited

in escrow, and the voting power of that stock was to remain in my brother and myself until it was finally paid for and the contract fully complied with for the purchase of the entire number of shares called for in that written contract.

Q. I do not understand you, then, to say that the Tennes-
679 see Copper Company gave you the perpetual right to vote that stock?

A. The contract will show plainly that we had the right to vote the stock until it was finally paid for.

Q. And that is all?

A. That is all.

Recross-examination.

By Mr. MILLER:

Q. You say the Tennessee Copper Company has been doing so beautifully with its fumes down there. Just what is the output of sulphur dioxide from the Tennessee Copper Company, and to what extent are they reclaiming that?

GENERAL DRAKE: I except to that question, as eliciting original evidence; as evidence not in rebuttal; the witness is not qualified to testify, he knowing nothing about the subject.

A. In fact, I cannot tell you anything about the output of the Tennessee Copper Company except just what I have heard. I do not know anything about it.

Q. You volunteered the statement in your examination just now by General Drake, that the Tennessee Copper Company was taking care of its fumes.

A. It has a contract to that effect with the State of Georgia.

Q. Oh, yes, that's what you mean?

A. That is exactly what I mean. It is of record and filed in the Supreme Court in the original case.

Q. You are cognizant of the fact that the Ducktown Copper Company has filed in this record a statement under oath of its stati-ticians and its management showing exactly what its operations are, the process, the output, and the reclamation, and you are also cognizant of the fact, as I believe you have been present at the taking of all the testimony, that the Tennessee Copper Company
680 has not filed a single one, and nobody knows what it is doing, from this record.

A. As I understand it, the Tennessee Copper Company is not before the Court on this motion or this action.

Q. No.

A. And as to what they are doing, or what they have filed, I do not know anything about that. Again, I was not present at the taking of all the testimony, and I do not know a thing about what you have just related regarding your company having filed these figures and estimates as to their output, reclamation, etc.

Q. Then when you stated that the Tennessee Copper Company

was taking care of its output, you stated something you did not know anything about, did you not?

A. When I stated that, I do know absolutely that the Tennessee Copper Company has entered into a written contract with the State of Georgia, whereby it has specifically agreed to care for its fumes during the growing season, and that contract is filed of record.

Q. If it is caring for all of its fumes, why does it pay the State of Georgia an annual amount of several thousand dollars?

GENERAL DRAKE: We except to that, because it is an argument with the witness, and not competent.

A. I would like to answer it, what operated with the——

GENERAL DRAKE: I object to any further argument in this case.

Q. You would like to answer just what operated with what power?

A. With the Georgia legislature and the people who had charge of that at the time we induced them to take action.

Q. Tell us about that, what factory was it that operated with the legislature?

A. The small amount that you speak of there was for leak-
681 age and for what might occur during the winter months. The conifers carry their leaves during the whole year, and they could be affected. It was not an easement that the State of Georgia granted the copper company. The main consideration was its specific agreement to care for its fumes during the growing season.

Redirect examination.

By GENERAL DRAKE:

Q. I want to ask you a few questions in regard to the irrelevant matter that was asked you by Mr. Miller and which I objected to when you were put back on the stand by Mr. Miller. The suit that Mr. Miller referred to in which you were complainant against the Ducktown Sulphur, Copper & Iron Company, please state what the purpose of that bill was, and what the relief sought in it was?

A. It asked for injunctive power, and did not ask for damages. We wanted the damage stopped. We wanted relief.

Q. You were seeking the same thing that the State is seeking in this case?

A. As nearly as possible. We did not ask for damages. We simply wanted to get the evil stopped. The State of Georgia had gotten out an injunction and for some reason would not have it enforced, and we wanted to get the evil stopped there. We asked for an injunction, but did not ask for any damages whatsoever.

GENERAL FOWLER: Question and answer objected to, because the record is the best evidence.

Q. Do you know that old fellow who testified here the other day, M. S. Clayton, who swore he would not believe you on your oath?

A. I do.

Q. How long have you been knowing him?

A. About 15 years.

Q. Do you know whether or not he has had ill feeling toward you; if so, tell about it.

682 A. He was county surveyor in our county there, and we had a number of trespass cases where people went on our lands and stole timber, and we employed Mr. Clayton in his official capacity as county surveyor to go and run those lines, and paid him his regular fees for it, and he came into the office and reported he had established the lines, and when he would go into court he would forget all about running the lines. He would not swear to anything.

Q. For that reason did you discharge him and incur his ill will?

A. I did. And when he was county surveyor, we went and got Mr. Peter Hyatt to do the work, and I told him there that I would not believe this man Clayton on oath, and I wanted Hyatt to do the work so we could rely on a person sticking to his representations, what he had done, and what he was paid for.

Q. Do you know that because of the fact that you stated you would not believe him on his oath, that he got mad at you?

A. Yes, and I think he is trying to get back at me in my own coin.

Q. Did the settlement or sale of the stock referred to to the Tennessee Copper Company, or the settlement of the Shippen Lumber Company's case against it have anything to do in 1905 or now with your relations to this law-suit?

A. None whatever. I was instrumental in putting a bill through our legislature which offered this company very much better terms than the contract the State made with the Tennessee Copper Company, and although the Tennessee Copper Company had paid myself and my brother $175,000 for stock in our company, and had paid Shippen Brothers Lumber Company $50,000, we were just as anxious to have this company treated in the same light as the Tennessee Copper Company had been treated, if not in a better light. We wanted the damage stopped. That was all we were after. We wanted the smoke damage stopped in the State, and that is all we asked in the suit we now have against these people. That

683 is all I have ever wanted. Before we finish I would like to enter a protest against the ungrammatical language attributed to me by the stenographer who took the State's evidence in this case.

And further deponent saith not.

W. H. SHIPPEN,
By R. S. C. HUTCHINSON,
Commissioner.

Sworn to before me this November 6, 1914.

R. S. C. HUTCHINSON,
Commissioner.

Mileage.....260.

I, R. S. C. Hutchinson, Commissioner, hereby certify that I correctly took and transcribed the deposition of the within witness.

H. S. C. HUTCHINSON,
Commissioner.

684 EXHIBIT No. 1, TO CROSS-EXAMINATION OF W. H. SHIPPEN.

R. S. C. Hutchison, Com'r.

Shippen Bros. Lumber Co.

Manufacturers of Band Sawn Lumber.

Specialties Yellow Poplar, Bevel Sidings & Mouldings.

W. H. Shippen, Pres. & Gen'l Mgr.
Jas Mitchell, Vice pres.
Fred Joyer, Treas.
F. E. Shippen, Sec'y.

Poplar
White Pine
&
Oak.

OFFICE & STORE, ELLIJAY, GA., May 16, 1907.

MY DEAR MR. PATTON: I have just reached home having stopped en route. While in Cin'ti Tuesday, I had the following repeated from Ellijay— Superior Court Clerk Washington wires Hart injunction suit gained," when I wired you as follows:—"Supreme Court Clerk wires Copper Co. injunction granted" which I herewith confirm. Am also handing you a clipping from Atlanta Constitution which shows we have all we asked for. Judge Hart gives me full credit for the whole & as to what the other side think of my efforts in the matter, would like for you to ask the Att'ys of the Copper Co. By the way, it might be well for you to drop in on Martin Vogel, 170 B'y the next time you are in N. Y. & feel him. You know nothing of the case & see what he says. We ought to be loosing no time now in going for damages in earnest as our case is now made out. In addition, I consider *that* the Shippen B. L. Co. worth 25% more today than it was with this thing going on. Now the stockholders have said little of the victory but if they don't call this results, would like to know what name thay have for it.

I thought about giving Mitchell & D. this information while they were dickering with me about the sale of their stock but it did not take me many moments to decide that I would not be
685 doing the fair thing to withhold this information that came to me in my capacity as an officer of the Co. to work against them for my own private gain so gave them the information in full & am much surprised to relate they never seemed to see the point & I never thought it incumbent on me to point it out to them at this particular time. Now it is my decided opinion that I should get busy at once & see what can be done about settlement of our claim with these people & I am of opinion that they would settle with us promptly to get me out of the way & use my action

to control the others who have claims against them. I should see their Att'y in N. Y. at once but cannot leave here with things in the shape they now are. Now as to Mitchell, I am firmly of opinion that he & D. have an understanding about their holdings & one will hardly sell without the other. I am further of opinion that they both have been kicking up the rumpus & appearing on the side of the enemy in a hope to force a purchase. I did not have to hunt them about purchase, they hunted me & I had a time getting with Mitchell alone. When I finally did, I found him the toughest proposition to pin down to earth & keep on his subject I have ever been up against. He held out stiff for $50,000. When he saw Dyer they offered to take par for both interests. I was with M. about all day and they only agreed to this at the depot just as I took train & I wired you from Falmouth en route as follows: "Could have bought both interests or the one not wanted will write en route Ellijay" which I herewith confirm. Now if you can shortly get Mitchell to Phila. or some other place or find when he is to be there & let me meet him there without D. I feel sure I can buy his stock alone & for something less than par. Of course such meeting must apparently be accidental on my part. I offered ⅓ cash & notes @ 1 & 2 & 5% for the balance with their stock for collateral if I bought & they were satisfied at this.

686 Please let me hear from you promptly on above. I think we should do business. Your uncle is sore and combed both you & I repeatedly. When he had the Supreme Court news he remarked, it would not pay dividends. Now, please do not repeat this to him for I don't want to widen any breach.

Field told all over here that Frank & I were to be fired out at Cinti. & was over twice during our absence for information that I hear he did not get. I may hear further from M. & D. & with kind regards I am,

Sincerely yours,

WILL H. SHIPPEN.

I pen this as it is only for you & I fear to risk it thro' stenographer.

687 Record of Minutes of a special called Stock Holders meeting of the Shippen Bros. Lumber Co. of the City of Ellijay, Ga., held by order of —— ——, at Manhattan Hotel in New City, March 27, 1908.

The meeting was called for the purpose of discussing settlement of claim for damages of this corporation against the Tennessee Copper Company.

The following stockholders being present in person, James Mitchell, Fred J. Dyer, C. E. Patton, C. S. Russell, W. S. Reed, W. H. Shippen, James A. Drake, and the North Georgia Lumber Company by James A. Drake, President, also F. E. Shippen by proxy by W. H.. Shippen and H. J. Patton by proxy by C. S. Russell. The same being all the stockholders of the Shippen Bros. Lumber Com-

pany. The usual notice of call for said meeting being waived by all the stockholders. A general discussion ensued as to this corporation's claim against the Tennessee Copper Company. Mr. W. H. Shippen stated that he had been asked by the representatives of the Tennessee Copper Company to meet them in New York to discuss settlement of this corporation's claim against the Tennessee Copper Company, that in *persuant* of such request did meet Mr. Martin H. Vogel, their counsel in the matter and on being asked by Mr. Vogel the amount of our claim that he had asked and demanded Two Hundred Thousand Dollars in compensation of this corporations damages to date, that on hearing this amount Mr. Vogel stated that he was excessive in his demands and that he did not represent the ideas of his stockholders and directors, and that he (Vogel) could settle with the others for a very small part of this figure, and that Mr. Vogel further stated that he had been approached by one of our party who had suggested to him a figure of ($30,000.00).

Mr. Shippen stated that he had assembled the meeting to learn the stockholders' pleasure in the matter. It was decided to have Mr. Vogel come before the meeting and discuss at length
688 the matter between us, and he according- appeared before our body and went into the matter between his corporation and ours and asked our corporation to submit an offer. After Mr. Vogel left the meeting, Mr. Shippen stated that he had always asked the Tennessee Copper Company $200,000.00 and had never named a lower figure than this to them, and it was his opinion that this corporation should ask at least $100,000.00 in satisfaction of our damages to date, and that any offer should be to date and leave any future damages open. The discussion that ensued developed the fact that there was great diversity of opinion on this question among the various stockholders present and that Mr. Shippen stated that he had now had his say and would retire and let the other stockholders present decide the matter among themselves and would concur in anything that they might do. Mr. W. H. Shippen did retire and the following was the result of the deliberation.

It was unanimously voted that Mr. F. J. Dyer be authorized to report to the Tennessee Copper Co. that in consideration of Fifty Thousand Dollars this corporation will release it, the Tennessee Copper Company, from all claims for damages and grant to it an easement permitting it to allow smoke and gass from its furnaces to pass over and on our lands at all future times free from any claim for damages and in case of the acceptance of this offer the president, W. H. Shippen, be and he is hereby authorized to execute such a release, grant an easement leaving terms of payment of said Fifty Thousand Dollars to be adjusted by Mr. W. H. Shippen and Mr. F. J. Dyer. As the above was the conclusion of this meeting, Mr. W. H. Shippen for himself and by proxy for F. E. Shippen fully concurred in the same.

W. H. SHIPPEN,
Pres. & Chairman.

689 Memorandum of Agreement made this first day of April, nineteen hundred and eight, between Shippen Brothers Lumber Company, a corporation organized under the laws of the State of Georgia, party of the first part, and Tennessee Copper Company, a corporation organized under the laws of the State of New Jersey, party of the second part;

Whereas, the party of the first part (hereinafter called the Lumber Company) represents that it is the owner in fee simple, free from all incumbrances, of certain lands and timber in the State of Georgia, and owns certain good and valid options, contracts and interests on other timber lands in said State, as scheduled and claimed in inventory and reports in books of said Lumber Company, and the said Lumber Company has asserted certain claims or demands against the party of the second part (hereinafter called the Copper Company) for damages alleged to have been done to said lands and timber by said Copper Company by reason of the maintenance and operation of its smelters and plant and the smoke, fumes and gasses therefrom; and

Whereas, both said parties are desirous to fully settle their differences and the Copper Company is desirous to continue its business as heretofore and as it may hereafter see fit so to do without let, hindrance or molestation of said Lumber Company or other party or parties, and to be released and relieved of any and all litigation and claims for past, present and future damages; and

Whereas, the parties hereto have duly authorized their officers executing this agreement so to do with full power to act in their behalf to accomplish and complete said objects upon the terms and conditions hereinafter set forth;

Now this Agreement Witnesseth: that for and in consideration of the premises and the mutual covenants and agreements
690 herein contained and the payment of one dollar in hand paid by the Copper Company to the Lumber Company, the receipt whereof is hereby acknowledged, said Lumber Company does hereby settle, compromise and release each, every and all of its claims and demands against said Copper Company, and the said Lumber Company covenants and agrees to and with the Copper Company to execute and deliver to the Copper Company at the time of closing as hereinafter stated, deeds, releases and instruments as hereinafter more fully described, and to accept the sum of Fifty Thousand ($50,000.00) dollars, payable as follows:

At the time of the closing as hereinafter fixed, twelve thousand, five hundred dollars	$12,500.00
At the expiration of one year from the date thereof twelve thousand, five hundred dollars	12,500.00
At the expiration of two years from the date thereof twelve thousand, five hundred dollars	12,500.00
At the expiration of three years from said time of closing the sum of twelve thousand, five hundred dollars	12,500.00
Making a total sum of fifty thousand dollars	$50,000.00

And it is further covenanted and agreed by said Lumber Company to and with said Copper Company that it will, at the time and place of closing hereinafter fixed duly execute and deliver unto said Copper Company a full and general release of each and from all claims and demands past and present which it has or may have had against said Copper Company, its successors or assigns, and to give and deliver to the Copper Company a full and general release duly executed unto the Copper Company for any and all damages that may arise from the operation of its smelter plants or from any smelter plants it may have or which it may hereafter have by reason of smoke, fumes and gases, passing over and upon the lands or timber now owned or controlled or in which said Lumber Company is now interested, and said Lumber Company will therein
691 covenant not to make any claim or demand in the future or bring any action or proceeding, either in law or equity, for any damages by reason of smoke, fumes and gasses passing over and upon the lands and interests now owned or claimed to be owned, controlled, leased or optioned by said Lumber Company by any operations of such Copper Company without limitation in respect to any increase in the amount or intensity of such smoke, fumes and gasses or from any present or future method of operation, and said Lumber Company shall covenant to hold the said Copper Company harmless of from and against all claims and demands which may be asserted by said Lumber Company, its successors or assigns, or any party or parties for damages to said lands, timber and interests by reason of smoke, fumes and gases passing over and upon the same.

But in case the Lumber Company sells any of its lands of interests the part of the covenant in reference to holding the Copper Company harmless shall not apply to the damages which might be claimed by successors in title by reason of any increased amount and intensity of smoke, fumes and gases over and above that allowed by the easement hereinafter referred to.

And it is further covenanted and agreed by said Lumber Company to and with said Copper Company that at the same time and place it will duly execute and deliver unto said Copper Company its deed, or deeds, or other instruments as may be required, and in such form and language as may be required by which it in terms grants, bargains and sells to said Copper Company, its successors and assigns, a right of easement and easements by which said Copper Company and its successors and assigns may maintain and operate smelters or plants as it may require and allow and permit the smoke, fumes and gases therefrom to pass over and upon said lands,
692 timber, options and interests as aforesaid, without let, hindrance or molestation of said Lumber Company, its successors or assigns, creating by said instrument a perpetual servitude, easement or estate, which shall run with the land in favor of said Copper Company, its successors and assigns, and against said Lumber Company, its successors and assigns, in respect to all the lands, timber, options, contracts and interests now owned or claimed to be owned, leased, or optioned, or in which said Lumber Company claims to have interests and good valid options, and such instruments shall contain as to the lands owned or claimed to be owned in fee the

usual covenants contained in warranty deeds used in Georgia, with a proviso, however, that the easement or easements so to be granted shall be limited to the maintenance by said Copper Company, its successors and assigns, or a smelting plant outside of the State of Georgia emitting substantially no more smoke, fumes and gases than its present smelting plants can or might emit when operated at their fullest capacity without regard to the operation of the Sulphuric Acid Plant, and in case it extends its plant into the State of Georgia or emits substantially more smoke, fumes and gases than such fullest capacity so stated, then in either of these events this easement shall not extend to the additional smoke, fumes and gases so liberated or emitted.

The Lumber Company covenants and agrees to notify the Copper Company before any sale, lease or other disposition of all or any of the lands or timber interests herein referred to and to give timely notice of any action or proceeding affecting title to same so as to give the Copper Company sufficient time to record any or either of said instruments.

And it is further covenanted and agreed that nothing herein contained shall be construed as an admission causing any damage or of any liability of said Copper Company to said Lumber Company in respect to doing or causing any damage to said lands or timber interests.

693 At the time of closing the Copper Company will execute to the Lumber Company an instrument duly signed by its authorized officer which in effect shall provide for the discharge and cancellation or satisfaction of record of the easements herein mentioned in the event and upon the condition that said Copper Company refused to make any of the payments to the Lumber Company, and said instrument shall be deposited in escrow with the Trust Company of America, in the City of New York with the understanding that said instrument be delivered over to the Lumber Company in the event that the Copper Company fails to make any of the payments herein mentioned but after and upon the final payment by the Copper Company to the Lumber Company, this instrument is to be given back to the Copper Company and cancelled.

And it is further agreed that the Lumber Company shall furnish to the Copper Company a certified extract of the minutes of their meeting as will prove the authority of the officer executing said instruments and said instruments shall contain full and sufficient descriptions of the lands and interests herein referred to. And it is further agreed that the closing and delivery of these papers shall be held at the office of Martin H. Vogel, Borough of Manhattan, City of New York, on the 17th day of April, 1908, at 10 o'clock in the forenoon.

In Witness Whereof the parties hereto by their officers and agents duly authorized have set their hands and seals the day and year first above written.

SHIPPEN BROS. LUMBER CO.,
WM. H. SHIPPEN, *Pres.*
TENNESSEE COPPER CO.,
By J. PARKE CHANNING, *Pres.*

694 STATE OF NEW YORK,
County of New York, ss:

On this first day of April, 1908, before me personally came William H. Shippen to me known who being by me duly sworn, did depose and say: that he resided in Ellijay, Georgia, that he is the President of the Shippen Brothers Lumber Company, the corporation described in and which executed the foregoing instrument; that he knew the corporate seal of said corporation, and that the seal affixed to said instrument is a copy of said seal, and that it was so affixed by order of the Board of Directors and by order of the stockholders of said corporation, and that he signed his name by like order.

JOHN P. O'BRIEN,
Notary Public Kings Co. Cert. Filed in N. Y. Co.

STATE OF NEW YORK,
County of New York, ss:

On this first day of April, 1908, before me personally came J. Parke Channing, to me known, who being by me duly sworn, deposes and says: that he resides in the Borough of Manhattan, City of New York; that he is the President of the Tennessee Copper Company, the corporation described in and which executed the foregoing instrument; that he knew the seal of said corporation, and that the seal affixed to said instrument was a copy of said seal, and that he as President signed his name thereto with full authority.

JOHN P. O'BRIEN,
Notary Public Kings Co. Cert. Filed in N. Y. Co.

695 It is hereby agreed that the closing of the within contract is adjourned to April 28th, 1908 at ten o'clock forenoon at the Piedmont Hotel, Atlanta, Georgia.

New York City, April 17, 1908.

MARTIN H. VOGEL,
Representing Tennessee Copper Company.
MILLARD S. REED,
Representing Shippen Brothers Lumber Co.

It is hereby agreed pursuant to letters between the parties hereto that the closing of the within contract is adjourned to May 1st, 1908, at ten o'clock A. M. at the Piedmont Hotel, Atlanta, Ga.

This April 28th, 1908.

HOWARD CORMICK,
Representing Tennessee Copper Co.
SHIPPEN BROS. LUMBER CO.,
W. S. SHIPPEN, *Pres.*

Filed in Open Court, September 28, 1914.

O. C. FULLER, *Clerk,*
By J. D. STEWARD, *D. C.*

696 Agreement made this third day of April, 1908, between William H. Shippen and Frank E. Shippen, parties of the first part, and Oscar B. Van Sant, party of the second part, witnesseth:

Whereas, the parties of the first part represent that they are the owners of fifteen hundred and sixty (1560) shares of full paid and non assessable stock of the Shippen Brothers' Lumber Company, and that the said Corporation was organized under the laws of the State of Georgia, having a capital of One Million Dollars ($1,000,000) divided into ten thousand shares (10,000) of which forty-five hundred and sixty (4560) shares are issued and fully paid for and that said company has no bonded indebtedness, and that the statement submitted and signed contemporaneously herewith, shows the true condition of the Corporation on the 31st day of December, 1907.

Now therefore, in consideration of One Dollar ($1.00) to the other in hand paid, and in consideration of the premises, agreements and conditions hereinafter stated, it is agreed as follows:

1. Parties of the first part agree to sell and deliver to the party of the second part Seven Hundred and Eighty (780) shares of the stock of the Shippen Brothers Lumber Company, which is one-half of their holdings in the said Company, to the party of the second part at the price of One Hundred and Fifty Dollars ($150.00) per share, and the party of the second part hereby agrees to purchase said Seven Hundred and Eighty (780) shares upon the terms and subject to the premises, agreements and conditions herein, and to make payments for said shares on the following dates and in the following amounts:

On the third day of April, 1908, for 100 shares of the above stock	$15,000.00
On the first day of May, 1908, for 14 of these shares	2,100.00
On the first day of March, 1909, for 134 of these shares	20,100.00
697 On the first day of March, 1910, for 134 of these shares	20,100.00
On the first day of March, 1911, for 134 of these shares.	20,100.00
On the first day of March, 1912, for 134 of these shares.	20,100.00
On the first day of March, 1913, for 130 of these shares..	19,500.00
Making a sum total of for the 780 shares above named..	117,000.00

2. On default of any payment upon the date hereinbefore set forth for a period of sixty (60) days after the due tender of the shares of stock then to be delivered and upon tender of all stock above stated remaining undelivered, the amounts due and payable for said stock as hereinbefore provided shall, at the expiration of said sixty (60) days become payable and the parties of the first part shall thereupon become entitled to enforce the collection of the same.

3. At the time of each payment the number of shares above mentioned of the Shippen Brothers Lumber Company shall be signed in blank in proper form, and except the fourteen (14) shares, de-

livered to the Central Trust & Safe Deposit Company, of Cincinnati, Ohio, or any other good trust company of Cincinnati, to be held in escrow by said Trust Company until the final payment herein mentioned, and to be delivered to the party of the second part or his assigns upon the final payment or at such a sooner date as may be consented to by all parties hereto. The fourteen (14) shares shall be delivered to the party of the second part within thirty (30) days' written notice.

4. During the continuance of this contract the voting of these shares, excepting the said fourteen (14) when issued to the party of the second part, shall be and remain in the parties of the first part. Any dividend paid by the company shall, on all the shares of stock paid for, be collected by the parties of the first part and paid over to the party of the second part. Any and all dividends, benefits, profits and other distributions paid on or given or
698 accruing to shares of stock not paid for, above eight (8%) per cent on the present stock issued, per annum or equal to the amount of eight per cent (8%) per annum, on the present stock issued shall be for the benefit of and paid to the party of the second part and applied on any back payments yet unpaid on this contract.

5. In the event of the dissolution, voluntary or involuntary, of the Shippen Brothers Lumber Company, during the term of this contract, this contract shall terminate upon such event and there shall be no further liability on the part of the parties hereto, and no further payments required, and the stock paid for be released from escrow and delivered to the party of the second part.

6. The parties of the first part further agree that at the expiration of five years from March 1st, 1908, they will sell and deliver to the party of the second part, and the party of the second part agrees that he will purchase their remaining seven hundred and eighty (780) shares of the stock of the Shippen Brothers Lumber Company at One Hundred Fifty ($150.00) Dollars per share, payable one-half in cash on said first of March, 1913, on delivery to him of said stock, and the remaining one-half on March first, 1914, on the delivery of the balance, and it is agreed that the said conditions as to dividends and distributions paid or accruing on these shares from the date of this contract, as herein set forth in regard to the other shares, shall apply to these shares.

7. That neither William H. Shippen nor Frank E. Shippen shall purchase nor be interested either directly or indirectly in any shares of stock, security or obligations of any other lumber company, and they nor either of them shall be interested either directly or indirectly in any saw mill or partnership in the lumber business within a radius of two hundred (200) miles of the smelting plants of the Tennessee Copper Company. That William H. Ship-
699 pen shall use his best endeavors to remain President of said Company and a member of the Board of Directors for a period of at least three years.

8. The parties of the first part agree to give the party of the second part a full and true statement of the condition of the Com-

pany once a month as of the first of each and every previous month, and to keep the party of the second part fully and truly advised of all transactions of the affairs of the Shippen Brothers Lumber Company, to which a stockholder would be justly entitled.

9. The party of the second part shall have the right at any time during the continuance of this contract to tender payment for any or all of the shares not paid for and delivered and at such time and in such event the parties of the first part shall deliver to the party of the second part all shares free from escrow signed in blank, and properly endorsed on payment of the full purchase price for the fifteen hundred and sixty (1560) shares. The parties of the first part will not vote or favor the issuance of additional shares of stock by the Company unless the party of the second part consents thereto.

10. It is distinctly understood and agreed that the party of the second part buys this stock wholly on its merits and without representation of any sort by the parties of the first part, except as is stated in the typewritten statement submitted at the time of the execution of this contract and marked "Schedule A".

11. The parties of the first part agree that they will not act with any other parties or do anything against the interests of the Tennessee Copper Company, as they may be advised by said Tennessee Copper Company.

12. This contract is not assignable by the party of the second part and all rights given hereunder are likewise given to his assigns. The party of the second part is fully aware of the settlement of claims of smoke injury between the Shippen Brothers Lum-
700 ber Company and the Tennessee Copper Company previously entered into and ratifies and approves such settlement.

13. Parties of the first part hereby acknowledge payment of the first mentioned sum of Fifteen Thousand ($15,000.00) paid by Oscar B. Van Sant by certified check under date of April 3rd, 1908, on the Seaboard National Bank, of New York City, and signed by said Oscar B. Van Sant.

In witness whereof, the parties hereto have hereunto subscribed their names and set their seals this third day of April, 1908; the said William H. Shippen representing that he has authority to sign for Frank E. Shippen and agreeing to send such written authorization and ratification signed by Frank E Shippen.

WILLIAM H. SHIPPEN,
FRANK E. SHIPPEN.
By W. H. SHIPPEN, *Att'y.*
OSCAR B. VAN SANT.

In Presence of:

ALICE A. TRILL.
Each page ini-aled "OBVS."
MARTIN H. VOGEL.

701 STATE OF PENNSYLVANIA,
County of Allegheny, ss:

Before me, the subscriber, a Notary Public in and for said County and State, personally appeared William H. Shippen who acknowledged the foregoing instrument to be his free act and deed, and also asknowledged the signature of Frank E. Shippen by himself as Attorney in Fact for said Frank E. Shippen.

Witness my hand and notarial seal this 8th day of April, 1908.

ALICE A. TRILL,
[SEAL.] *Notary Public.*

My commission expires Jan. 16, 1909.

The Tennessee Copper Company guarantees the full performance of the above contract on the part of the party of the second part.

TENNESSEE COPPER COMPANY,
[SEAL.] By J. PARKE CHANNING, *President.*

I hereby guarantee the Tennessee Copper Company has the legal power to guarantee the above contract, and that the same is a legal and binding guarantee as to the Tennessee Copper Company.

FREDERICK LEWISOHN.

Payments to be made at Carnegie Trust Co., N. Y. City.

702 In the United States District Court for the Northern District of Georgia, Northern Division.

In Equity.

CHAS. S. RUSSELL et al., Complainants,
vs.
SHIPPEN BROS. LUMBER CO. et al., Defendants.

GEORGIA,
Fulton County:

Personally appeared W. H. Shippen who on oath says that soon after locating in Gilmer County and establishing the Shippen Bros. Lumber Company, the two copper smelting furnaces known as the Tennessee Copper Company and the Ducktown Company, located in the State of Tennessee, began to emit fumes which came over into the State of Georgia and began to actively destroy the standing timber. As the timber was killed, these fumes gradually extended until they began to affect the timber interests of the Shippen Bros. Lumber Company. Deponent with his brother then began an active campaign for the mitigation of this nuisance and the protection of the timber interests of the defendant company.

It is impossible for this deponent now to state in any itemized way the incessant labor and toil that was necessary to get this move-

ment to protect the Georgia timber into shape. For years deponent with his brother labored, with the other owners of timber in North Georgia, with legislators, with the legislature itself, with committees from the legislature, and different officials of the State, and in the scientific study of the character of the fumes, the extent to which they would go and the injury inflicted. After almost
703 numberless appeals to the public authorities, to the newspapers, to scientific magazines, and using every influence in the world that could be brought to bear upon the situation, deponent with his brother, finally got the movement into a compact, well organized condition where it presented a formidable front to the further infliction of the damage. The State of Georgia was finally induced, almost entirely by the labors of deponent and his brother, to file a Bill in the United States Supreme Court. In the preparation of the trial, deponent procured and caused to be procured thousands of affidavits which when printed filled several volumes of printed matter as a part of the record of the litigation. He visited and traveled all over several counties of North Georgia obtaining these affidavits with reference to the existence of the smoke. This litigation resulted in the adjudication by the Supreme Court of the United States that a nuisance existed which should be stopped. The litigation of course very seriously affected the two copper companies mentioned. They resisted it bitterly over a period of many years and never ceased this resistance even after the decree of the Supreme Court of the United States.

In 1908 and after this litigation had been decided and it became apparent to these copper companies that the end of the litigation was practically at hand, they took up negotiations with the Shippen Bros. Lumber Company for an adjustment of the damage which had been inflicted on its property. This was adjusted by the payment by the Tennessee Copper Company to Shippen Bros. Lumber Company of the sum of $50,000.00.

After said settlement had been effected, with the unanimous consent of all the stockholders, and the contract for the payment of the money had been closed, the Tennessee Copper Company took up with deponent and his brother the proposition of purchasing the stock which they had in the Shippen Bros. Lumber Company, and after negotiations deponent and his brother agreed to sell the stock.
Further details of this transaction are set out in another affi-
704 davit of deponent. On April 3rd, 1908, a contract was entered into for the purchasing of this stock, which then represented 1560 shares, the contract being nominally entered into with one Oscar Van Sant, who was an employee of the Tennessee Copper Company, located in their offices at 11 Broadway, New York. It was understood at the time that Mr. Van Sant was not the real purchaser, and in order to put the true vendee back of the contract, it was agreed upon between deponent and his brother on the one side and the Tennessee Copper Company on the other that the latter should guarantee the full performance of the contract of Mr. Van Sant, this guarantee being in writing and attached to the contract. It was executed by the then president, Mr. J. *T.* Channing. The

then moneyed interests which controlled the company was represented by the Lewissohn family, very wealthy people, and Mr. Frederick Lewissohn, who was the vice president of the company and the representative of the money interest back of the company, in turn guaranteed that the Tennessee Copper Company had the legal power to make the guaranty. In the negotiations and in the closing of this contract, the papers were prepared and the discussions had with the officers of the Tennessee Copper Company and the attorney for said company. Deponent, who was in active charge of these negotiations in behalf of himself and his brother, had substantially and practically no dealings whatever with Mr. Van Sant. Mr. Vogel, the attorney for the copper company, Mr. Channing and Mr. Lewissohn, officers of the copper company, were the people with whom deponent dealt and the dealings were had in the offices of said company and with said officers at a social club of which they were members. In none of these negotiations, either at the office of the copper company or at the social club, was Mr. Van Sant ever present. Deponent did not know him, had no interview with him, and no dealings with him until he was brought into the room at the office of the copper company and handed deponent his check for
705 the first payment.

The first eight installments for the purchase of the stock were paid at or about the time they matured. The last installment of $78,000. was paid by a check of the Tennessee Copper Company on or about March 7th, 1913, this check being drawn by the company itself upon its bank account and being given to deponent in the office of the company in New York City. This payment was made after deponent had had a conference with the board of directors and the officials of said company. About this time there was a change in the financial interests back of the Tennessee Copper Company and practically the entire management—president and all—of the old company was supplemented by new officers. About March 6, 1913, the contract of deponent and his brother was assigend to a Mr. Henry I. Gaskill, who was an employee of the copper company under the new administration. On March 6th, 1913 deponent gave a receipt for the last payment made, a copy of which will be exhibited to the court, to said Henry I. Gaskill but the check which made the payment is the check above referred to, drawn by the copper company upon its account and delivered in its office to deponent. On the same day Walter M. Briggs, treasurer of the copper company, received 520 shares of the capital stock which deponent and his brother had agreed to sell under the contract of April 3rd, 1908. The stock was delivered, not to Henry I. Gaskill, but direct to Mr. Briggs as treasurer of the Tennessee Copper Company. The payment of this $78,000. and the delivery of the stock immediately above mentioned was the consummation of the payment which was due five days prior thereto, to wit on March 1st, 1913, under the contract of April 3rd, 1908. Deponent went to the office of the copper Company in New York City for the purpose of receiving this payment a day or two prior to March 1st, 1914. Deponent when he first went to New York in reference to

this collection, called on Mr. Frederick Lewissohn, who had guaranteed that the Tennessee Copper Company had the legal
706 right to guarantee the contract, and who was at the time the contract was entered into, vice president of the company. Mr. Lewissohn informed deponent that he and his associates had been ousted from the Tennessee Copper Company and that the new interests in the company were represented by Mr. James Phillips Jr. as president and Mr. Walter Briggs as treasurer, with offices at 2 Rector Street. Deponent then went to Mr. Phillips, who referred him to Mr. Briggs. Deponent then went to Mr. Briggs who told him that the company meant to treat him right about the matter but did not quite understand the contract, and asked for a few days' delay until they could look into it. On the 5th day of March, 1913, there was a meeting of the directors, either formal or informal, of the Tennessee Copper Company, and at this meeting there were some four or five of the directors and officers present. Deponent went before their meeting and had a conversation, explaining the contract, which lasted a half hour or so with these different officers. In this meeting there were present both Mr. Phillips, president, and Mr. Briggs, secretary, and Mr. Utley Wedge, who is now the vice president. At this meeting the stock was dealt with as the stock of the Tennessee Copper Company. Neither Mr. Van Sant nor Mr. Gaskill was present, to deponent's knowledge. Deponent did not know Mr. Gaskill at that time, had never been introduced to him, and does not recall having seen him at the meeting. After this conference, Mr. Phillips, the president of the copper company, stated to deponent that the copper company meant to treat him right, would live up to the contract and make the payment. On the following day deponent surrendered to the company the stock in question and received the check in question and took the receipt heretofore mentioned from the secretary.

Subsequent to this time, and during the year 1913, de-
707 ponent was in the City of New York several times. He called several times at the office of the copper company, and there had different interviews with Mr. Briggs and Mr. Wedge. At these different interviews, these gentlemen stated, in substance, to deponent that they (meaning the stockholders of the Shippen Bros. Lumber Company) must get together and dispose of the timber owned by the company. There never has been at any time any stock issued to the Tennessee Copper Company or any of its officers, or owned or controlled by them, to deponent's knowledge, except the stock which deponent and his brother agreed to sell to Van Sant, and which now appears in the name of the Southern Timber & Power Company of Delaware.

When it became time to have the regular annual meeting of the stockholders of the defendant company in January, 1914, Mr. Wedge, the officer of the copper company representing this socalled Southern Timber & Power Company stock, attended the meeting representing this stock which at that time stood in the name of the second assignee, Mr. Gaskill. Mr. Wedge acknowledged deponent's right to vote the stock. Mr. Wedge indicated to deponent

and his brother that the last payment upon the stock would be met by the copper company, and for that reason he would prefer that no directors or officers be elected at the stockholders meeting, and that it be referred to a later date. Deponent and his brother readily agreed to this and the meeting was in fact deferred until the 26th of February in Philadelphia. Deponent had also in the meantime seen Mr. Wedge several times in New York, and there was then pending what appeared to be a substantial hope of disposing of the property to several different customers. The fact that this possible sale might be consummated was also one of the reasons why deponent and his brother agreed that the meeting might be adjourned.

708 Deponent and his brother attended the adjourned meeting held on February 26th, 1914, in Philadelphia. The last payment for the stock had not been made, and it was not then due, and a day or two before the meeting, Mr. Wedge, at the copper company's office, in New York, requested a further postponement of the election of directors and offices. Deponent again agreed to this proposition, as he had not received the last installment due. At the time of this last request and postponement of the stockholders meeting, the stock set out in the supplemental bill in the above stated case had been transferred from Gaskill to the Southern Timber & Power Company, this transfer having been effected on or about February 9th, 1914. Mr. Gaskill was present at the February meeting, representing this stock. On or about February 25th, 1914, deponent had the interview above referred to with Mr. Wedge at the office of the Tennessee Copper Company in New York City. Deponent and Mr. Wedge, representing the stock now standing in the name of the Timber & Power Company, agreed upon the details of what should occur at the stockholders meeting. There were then several propositions with reference to the sale of the timber pending, and these were discussed. Mr. Wedge at no time represented, either personally or as the agent of any other individual, any stock in the Shippen Bros. Lumber Company except the stock standing in the name of the Timber & Power Company. At the meeting in February, and carrying out the details on what should be done at the meeting agreed upon between Mr. Wedge and deponent on or about February 24th, Mr. Wedge was placed upon a committee for the purpose of making certain examinations and reports. He was at the meeting placed upon this committee and did make the examination and report sometime in May, 1914. He did this as the representative alone of the

709 Tennessee Copper Company in its ownership of the Timber & Power Company stock. The payment due March 1st, 1914, was not met and deponent has actively pressed the payment of the sum due. He has a number of times interviewed in New York Mr. Wedge with reference to the matter. Deponent went to Mr. Wedge because of a statement made by Mr. Briggs the treasurer, that the directors had met and delegated the entire matter of dealing with deponent and his brother to Mr. Wedge. Mr. Wedge never in any of these interviews denied that his company was the real

owner of the stock or that he did not know about the contract standing originally in the name of Mr. Van Sant, but placed his failure to pay the sum due ultimately — that there was some question about the title to some of the timber deeds held by the company. Deponent and his brother did not sell land to Mr. Van Sant as the representative of the copper company, but sold stock in the corporation. In April, 1914, Mr. Walter M. Briggs, the treasurer of the Tennessee Copper Company, visited Ellijay for the purpose of going over the property of the Shippen Bros. Lumber Company. Mr. Briggs was not the owner of any other stock individually, nor was he the representative of any other stock except that of the Tennessee Copper Company standing in the name of the Southern Timber & Power Company. Mr. Briggs was there several hours, went over the mills of the company and the mill yards, and in the conversation which ensued repeatedly spoke of the ability of the company to sell the timber interests, speaking of it as "our interests." Mr. Briggs had no other business than to inspect the plant of the defendant company, and came there as the treasurer and representative of the Tennessee Copper Company. He discussed in detail with deponent and his brother the opportunities for a sale of the entire timber interests.

710 Deponent exhibits to the court in connection with this affidavit a series of letters written to Mr. Wedge and his replies. The letters to Mr. Wedge are true and correct copies and the replies are the original letters of Mr. Wedge, and the court will observe from this correspondence that up to the present time the stock standing in the name of the Southern Power & Timber Company has been handled, and is now being handled, by the Tennessee Copper Company.

At the last meeting of the stockholders held September 16th, 1914, Mr. Wise, who appeared as the representative of the Timber & Power Company, brought with him a letter of introduction from Mr. Wedge of the copper company.

WILL H. SHIPPEN.

Subscribed and sworn to before me, this the 24th day of September, 1914.

A. H. BANCKER,
Notary Public, Fulton County, Ga.

711 Copy.

NEW YORK, N. Y., Mar. 6, 1913.

The undersigned, William H. Shippen and Frank E. Shippen, hereby acknowledge receipt to Henry I. Gaskill of the sum of Seventy-eight thousand ($78,000.00) dollars, being payments due March 1st, 1913, under contract between the undersigned, parties of the first part, and Oscar B. Van Sant, party of the second part, dated April 3rd, 1908, which contract has been assigned by said Van Sant to said Gaskill, and the undersigned further acknowledges

that all previous payments due under said contract have been made by said Van Sant in full to date.

Signed WILLIAM H. SHIPPEN
" FRANK E. SHIPPEN.

712 NEW YORK, N. Y., March 6, 1913.

Received from William H. Shippen and Frank E. Shippen five hundred twenty (520) shares of the capital stock of the Shippen Brothers Lumber Company, a Georgia corporation, as follows:

Certificate No.	26,	50	shares
" "	46,	165	"
" "	47,	165	"
" "	125,	40	"
" "	126,	100	"
Total		520	Shares,

all standing in the name of Frank E. Shippen and by him indorsed in blank.

WALTER M. BRIGGS,
Treasurer.

U. S. District Court, Filed in Clerk's Office Sep. 30, 1914.
O. C. FULLER, *Clerk.*

713 In the United States District Court for the Northern District of Georgia, Northern Division.

In Equity.

CHAS. S. RUSSELL et al., Complainants,
vs.
SHIPPEN BROS. LUMBER COMPANY et al., Defendants.

GEORGIA,
Fulton County:

Personally appeared W. H. and F. E. Shippen, who on oath say that they had been for a number of years engaged in the lumber business in Georgia and elsewhere at the time of the incorporation of the defendant company.

* * * * * * *

In reference to the charge that between 1903 and 1908 deponent W. H. Shippen devoted a large amount of his time in protecting the interests of the corporation against the fumes of the Tennessee Copper Company and the Ducktown Copper Company's furnaces, deponents say that this is true. Both of deponents gave a large amount of their time and brought to that situation every energy which they possessed, to protect the damage that was being inflicted. Deponents worked at it ceaselessly up to the time of the settlement made by the

company with the Tennessee Copper Company, and which was made over the protest and objection of deponent, W. H. Shippen. It is also correct that the damage inflicted upon the defendant's property was very great—several times more than the sum which the other stockholders, including the deponent Patton, voluntarily, knowingly and deliberately agreed to accept, and did accept over the protest of deponent, W. H. Shippen. It is also true that some monies were used by deponents in defraying these expenses, but this
714 was done with the knowledge and consent of all the stockholders, officers and directors of the company, was duly entered on the books, and never from that day to this has any protest been made. Deponents do not understand that H. J. Patton in said affidavit is now making any protest against said expenditures. During the years mentioned, each and every stockholder connected with the corporation was actively, constantly and repeatedly advised of the extent of the damages, its continuing character, the evil that threatened for the future, and the various efforts and labors of these deponents to put a stop to the infliction of these damages.

The statement contained in said affidavit on page eleven, that deponent W. H. Shippen stated to H. J. Patton that the damages caused by the Tennessee Copper Company was $400,000.00 is not correct. Deponents have kept in active actual touch with the damages that have been inflicted by the two companies; they were familiar with the value of the timber; they knew also the extent of the damage better probably than anyone else except the woodsmen of the company. Deponent W. H. Shippen estimated the damages inflicted by the Tennessee Copper Company at about $200,000.00 up to April 1908. Deponent probably stated that he wanted suits instituted to recover this damage; it certainly was very actively and importantly in his mind that the defendant company was entitled to maintain a suit of this sort and that $200,000.00 should be paid for the damage actually inflicted up to that period of time. What the future damage might be after 1908 neither of deponents could estimate. So long as the trees are alive they protect to a certain extent trees more remotely situated from the fumes. But as the barrier of trees is killed, the fumes float further into the forest, and year by year the region of damage is gradually extended. It has reached in the present instance some fifty miles from Ducktown.

715 The two copper companies were located in Polk County, Tennessee; they were strongly entrenched at that point; they dominated the county; they were careful to keep all properties and monies which could be attached out of the state of Georgia, and litigation with them in that county was an exceedingly perilous venture. The other stockholders of the company were somewhat averse to instituting this litigation unless it was absolutely the last resort. It was for this reason that they, and particularly deponent H.J.Patton, took up in New York or Philadelphia with the local agent of the copper company the matter of a settlement without at that time deponent's knowledge or consent. Mr. Martin Vogle prior to the meeting of March 27, 1908, stated to deponent W. H. Shippen that H. J. Patton, the gentleman who made the affidavit, had suggested

to him (Vogel) a figure of $30,000.00 in settlement of the Shippen Bros. Lumber Company claim for damages. Deponent W. H. Shippen when this statement was made was very greatly infuriated at it. At the stockholders' meeting on March 27th, and at which H. J. Patton was represented by proxy, deponent W. H. Shippen stated what Mr. Vogle had related to him and almost immediately thereafter Mr. Vogle himelf appeared at that stockholders' meeting. As is related in another affidavit, deponent W. H. Shippen strenuously urged the stockholders under no conditions to settle the then existing claims for damages at less than $100,000.00, and that this settlement should be for the then existing damages, leaving open for the future such damages as might be thereafter inflicted. The proposition of Patton, without the concurrence or knowledge on the part of deponent W. H. Shippen, had, however, already been carried to the Tennessee Copper Company. Deponent W. H. Shippen was so embittered by the interference with his plans and the preposterous suggestion of accepting $30,000.00, that he retired from the meeting when Vogle came into it. When Mr. Vogle left the
716 & 717 stockholders' meeting and deponent returned to it, he found that the stockholders had authorized a proposition to be made to the Tennessee Copper Company to settle all of the existing damage that had been inflicted, and to give them a perpetual easement to flood the lands for the future, all for the sum of $25,000.00.

Deponent W. H. Shippen was desperate at that situation thus presented. He and his brother at that time owned and controlled only about 34% of the capital stock, the total number of shares held by them at that time being 1560 shares. He and his brother combined could not prevent the settlement from going through. If deponents had at that time owned a majority of the stock, no negotiations with Mr. Vogel upon the basis indicated would ever have been tolerated nor would any such settlement have been authorized by the stockholders.

Deponent W. H. Shippen then proceeded very emphatically to raise the biggest character of a row he knew how to with the other stockholders, and as a result of this he finally got the proposition they then had authorized from $25,000.00 to $50,000.00. This was the best he could do with it. He — forced, because he was in a minority, to accept it and the resolution which is shown as of that date on pages 41 and 42 of the minutes was enacted and deponent was instructed to carry out that resolution by the execution of the easement and settlement mentioned. He did this over his protest, exceedingly regretfully, and determined that he would dispose of his and his brother's stock in the company if it was possible to get anything like a fair sum for it. As a result of this he immediately entered into negotiations with the Tennessee Copper Company under which he obtained a fair price of $150.00 per share for their stock, as is evidenced by the contract dated April 3, 1908.

Subsequent to this transaction, the stock of Fred J. Dyer and James Mitchell was offered to deponents at a sum very much less than

its value. Both Mr. Dyer and Mr. Mitchell had been stock-
718 holders of the company ever since it was organized, and understood as much about the company and its condition as did either of deponents. No representation whatever was made by deponents or either of them, to Mr. Dyer or Mr. Mitchell. For reasons satisfactory to these gentlemen, they desired to sell, and their stock was offered to deponents at a price which was less than the value of the stock notwithstanding any possible injury that might be inflicted upon the company's property by the Ducktown fumes, and they purchased it. Neither of these gentlemen has ever asserted or suggested that any misrepresentation whatever was made in connection with said stock by either of deponents.

* * * * * * *

The statement that on March 6, 1913, there was deposited to the account of Shippen Bros. $78,000.00 received from the copper company for the sale of deponent's stock, may be true in part. The statement in the affidavit that deponent W. H. Shippen stated to H. J. Patton that this sum had been derived from the sale of real estate is untrue. The fund in question belonged to the deponents and it was none of H. J. Patton's business where it came from. He had no right to any information with reference to the subject, asked for none, and got none.

The statement contained on pages 14 and 15 of the affidavit, that there was a pretended settlement with the copper company at a totally inadequate sum for the enormous damage which had been done Shippen Bros. Company's property, is true except that the settlement was not pretended. It was the result of long negotiation, part of which H. J. Patton had participated in very greatly to the detriment of the interests of the stockholders, and but for which said interference deponent W. H. Shippen would have been able to have ultimately received for his company a very much
719 larger sum. As has been stated, this deponent W. H. Shippen did not concur in the settlement, protested violently against the same and was forced into it only because he and his brother at that time held only a minority of the stock and were utterly unable to help themselves. Deponent W. H. Shippen was then the president of the company and executed the contract in question simply because he had been directed to do so by the majority vote of the stockholders and was helpless to do otherwise.

With reference to the charge on page 15, that in April, 1908, the book value of the stock of Shippen Bros. Lumber Company was $90.00 per share, these deponents do not know what appeared at that time to be the book value. As a matter of fact, the timber interests and lands were carried on the books at what they originally cost and not at what they were worth. Lands which had been held by the company and by the partnership prior to the organization of the corporation, and which were purchased at a perfectly nominal sum, and which had trebled and quadrupled in value, were still carried in 1908 on the books at their original cost. Nobody pretended to believe that the actual value of these timber interests were

not greatly in excess of the original cost price. To illustrate this, the 30,000 acres of land obtained from the North Georgia Lumber Company is now carried on the books of the company at what it cost, to wit $4. an acre. It is now reasonably and fairly worth not less than $15. an acre.

With reference to the statement in the affidavit at the foot of page 15 and top of page 16, that if all the stockholders of the company had been settled with at the same basis which was paid to deponents for their stock by the copper company, the corporation would have received about $278,000.00 may be a correct calculation. It is further more true that if at the March meeting, 1908, these
720 deponents had not been overridden by a majority of the stock, the corporation would have received in a settlement for the then inflicted injury not less than $100,000.00 or there would have been no settlement effected, nor would there have been in existence a perpetual easement authorizing the future flooding of the defendant's property. Deponents beg the court to carry in mind the fact that the man who made this affidavit was one of those majority stockholders that overrode deponent W. H. Shippen at that meeting and insisted upon a settlement being effected at $50,000.00.

Deponents have fully related the circumstances, motives, reasons, etc., which induced them to make the sale to the copper company. They had devoted years of incessant labor to the protection of the company from these fumes, and to the ascertainment of the damages which had been inflicted, and at a stockholders' meeting this labor was wantonly thrown away in a rediculous settlement made by the other stockholders. Deponents at that time and as a result of that meeting had just one burning desire, which was to get rid of all their stock in that company at the first possible moment, and clear their skirts of stockholders who were willing to — such a heedless, unnecessary and sacrificing settlement. Deponents estimated the standing timber, as such, worth not less than $1,000,000.00, and as an operating proposition several times more; they did not believe at that time that the property either as an operating proposition or as mere timber holdings to be worth fifty cents on the dollar with the perpetual right to flood it with copper fumes outstanding in favor of the copper companies.

It is correct that Mr. Whitmer opened negotiations about 1909 to purchase the capital stock of the defendant company at $125. per share. It is untrue that deponents or either of them broke up this sale. Mr. Whitmer was either unable to raise the money or subsequently changed his mind. Deponents are somewhat at a loss to understand the object of the financial statement contained on page 17. It is correct that deponents received for their
721 partnership property the sum of $25,000.00 in cash, and they subsequently received from the North Georgia Lumber Company $12,000.00 in cash, and from the copper company for the sale of their stock $175,000.00. There was none of these sums paid to deponents for any of the property of the defendant company. Said sums were paid to deponents entirely for their individual prop-

erty and with which neither Patton, the corporation nor any other stockholder had anything to do.

* * * * * * *

WILL H. SHIPPEN.
F. E. SHIPPEN.

Subscribed and sworn to before me, this the 29th day of September, 1914;

ZOE DAVIS,
Notary Public, Fulton County, Georgia.

U. S. District Court. Filed in Clerk's Office Sep. 30, 1914. O. C. Fuller, Clerk.

722 UNITED STATES OF AMERICA,
Northern District of Georgia ss:

I, O. C. Fuller, Clerk of the United States District Court, in and for the Northern District of Georgia, do hereby certify that the foregoing and attached printing and writing is a true, full, correct and complete copy of the original letter of W. H. Shippen to Mr. Patton, dated May 16, 1907; minutes of stockholders' meeting held at Manhattan Hotel, New York City, March 27, 1908, pages 41 and 42 of minute book; memorandum of agreement between Shippen Bros. Lumber Company and Tennessee Copper Company dated April 1, 1908; agreement between W. H. Shippen, F. E. Shippen and Van Sant, Exhibit D to the affidavit of Henry Adsit Bull; affidavit W. H. Shippen dated September 24, 1913; affidavit Will H. and F. E. Shippen, style of case and to first period on page 1; then beginning at last paragraph bottom of page 6 to second paragraph on page 10; then beginning second paragraph on page 12 to first paragraph on page 15, also page 18, on file in my office in the matter of Chas. S. Russell and others against Shippen Bros. Lumber Company.

In Testimony Whereof, I hereunto set my hand and seal of the said District Court, at Atlanta, Georgia, this the 4th day of November, A. D. 1914.

[SEAL.]

O. C. FULLER,
Clerk United States District Court,
Northern District of Georgia.

(Endorsed:) Supreme Court U. S. October Term, 1914. Term No. 1, Original. The State of Georgia vs. The Tennessee Copper Company et al. Continuation of the deposition of W. H. Shippen on behalf of the Complainant. Filed November 18, 1914.

723 No. 1.

THE STATE OF GEORGIA, Pl't'f,
vs.
THE TENNESSEE COPPER COMPANY and THE DUCKTOWN SULPHUR, COPPER AND IRON COMPANY, L't'd, D'f'ts.

Original. In Equity.

The Depositions of W. F. Naughan and Others, Taken on Behalf of the Defendants, The Ducktown Sulphur, Copper and Iron Company, L't'd, Commencing Thursday, June 18th, 1914, in the City of Chattanooga, Tennessee, Pursuant to a Notice Hereto Attached, in the Presence of J. A. Drake and Lamar Hill, Representing the State of Georgia, and J. A. Fowler, George G. Hyatt, and W. B. Miller, Esqs., Representing the Defendants.

724 The said witness W. F. NAUGHAN, being first duly sworn, upon examination testified as follows:

Direct examination.

By W. B. MILLER, Esq.:

Q. 1. Mr. Maughan, how old are you?
A. I am fifty years old.
Q. 2. Where do you live, with respect to the plant of the defendant Ducktown Sulphur, Copper and Iron Company, L't'd, which in this record for short we will call the Ducktown Copper Company?
A. About one and a half miles north of the Copper Company's plant.
Q. 3. Is that company located at the same place it has been since the company began operations?
A. Yes, sir.
Q. 4. When did that company commence operations, which have been continued down to the present time?
A. My recollection is that it began in 1891 or '2.
Q. 5. The operations have been continued without interruption continuously to the present date?
A. Yes, sir.
Q. 6. Before that company began to smelt ore, had their previously been operations of similar nature carried on in the Ducktown Basin?
A. Yes, sir.
Q. 7. By what company?
A. The Union Consolidated Mining Company.
Q. 8. Who was the manager of that company?
A. J. E. Raught.
Q. 9. Those operations extended over a series of years?
A. Yes, sir.

Mr. DRAKE: We will ask for the rule.

725 The witnesses were then requested to leave the room, and did so.

Mr. MILLER: Mr. Drake, under our practice, we are entitled to have present some one to remain as the representative of the Copper Company, and we have usually retained Mr. Reese, who merely knows the witness, and also knows the facts that they know, but we are going to call him as a witness. Will there be any objection to his remaining?

Mr. DRAKE: I think that is the rule, but is it not also the rule to put him on first?

Mr. MILLER: It is not so with us. I do not know *where* it is anywhere else. I want to meet every wish of yours so far as I can.

Mr. DRAKE: Well, that is all right.

Mr. MILLER: I understand it is agreeable.

Q. 10. During the operations of the company which was managed by Mr. Raught, what was the system of smelting, that is, smelting the ores, and eliminating the sulphur content?

A. Well, they roasted the ores before they were smelted in an open heap, roast piles.

Q. 11. How were those heaps constructed, in a general way, tell how that was done?

A. Well, they used wood underneath the ore, about probably eighteen or two foot thick. They would put about eighteen inches to two foot thick under the roast pile, put the ore on top, then they would fire the wood, and that would fire the sulphur, and it would burn out.

Q. 12. What was the size of those heaps?

A. Well, they were different sizes. I could not give just the dimensions. I have seen them hundreds of times, and I guess they usually had them from twenty-five to thirty feet wide, and forty to fifty feet long, and about, they usually use about four foot of ore, four foot thick on top of the wood.

726 Mr. DRAKE: Let me interrupt you just a moment. We might settle that now. Does not the order relate only to the change of conditions, is not that all, and is not all this set out fully in the old case, about the old method. I think it is pretty fully, I do not know just what it is.

Mr. MILLER: I do not know just what it does relate to, but I wanted to show by this witness what the old condition was, and he is the only witness I will introduce on that point. The trouble is that was all introduced so far back, without any cross-examination or anything.

Mr. DRAKE: I do not care but it merely incumbers the record, and the court wants, as I understand the order, to know the changed conditions since 1907, at the time the decree was entered. I do not want to appear as excepting, unless there is something material comes up.

Mr. MILLER: This is the one principal witness by whom we expect to show the early conditions there, coming down to 1907, and then

show the changes to the present. And I particularly want to go into it by one witness.

Mr. DRAKE: Please note my exception to the questions on the ground that they are irrelevant and incompetent for the reason that the facts are fully settled and proved in the original case, now in the supreme court of the United States, and it does not relate to the changed conditions since the decree was entered in the case; and it does not reflect on the issues in the present case.

Q. 13. Probably how many of those heaps were on the yard, known as the roast yard?

A. I could not give you just a definite number, because I was just a boy then, quite a good many, but I do not know just the number.

Q. 14. Several hundred.

A. No, sir, they did not roast as extensively as they do
727 now. There might have been fifty or seventy-five, something like that.

Q. 15. After those heaps were lighted, how long were they in process of burning, or smelting, or roasting?

A. From sixty to ninety days.

Q. 16. During that time, did or not the smoke or vapors ascend and drift into the atmosphere, from the roasting heaps?

A. Yes, sir.

Q. 17. After the ore was thus treated, what was next done with it?

A. Smelted through the furnaces.

Q. 18. Taken to the smelters?

A. Yes, sir, and smelted.

Q. 19. And what was sent to the smelters, as I understand it was converted into slag?

A. Part of it went to slag, and part went to mat proper.

Q. 20. Where was the slag conducted?

A. The slag is the waste, the mat is the product they were after.

Q. 21. The slag was run off, and was dumped into the slag pile?

A. Yes, sir.

Q. 22. And what was done with the mat?

A. Under Wraught's administration, it was reduced to about ninety-eight per cent copper and shipped.

Q. 23. About when did the operations of which Captain Wraught was the head, by the Union Consolidated Company cease?

A. I have forgotten just the year; it was probably in 1878 or '80, something like that; I do not remember just exactly when it was. I could not give the date.

Q. 24. When did the Ducktown Company begin operations, and did it operate open heap roasting for a number of years.

A. Yes, sir.

728 Q. 25. When did it cease to do open heap roasting?

A. Well, I believe it was in 190-, —I forget what year it was. They began probably in 1907, I am not sure about that, I get those dates mixed up.

Q. 26. You do not remember the year they ceased open heap roasting?

A. Really, I do not remember just the year. I have some notes of it, but I do not remember the year it was.

Q. 27. About when did the Tennessee Copper Company begin to operate a smelting plant, and treating ores in that same section?

A. About 1900 or 1901.

Q. 28. Has it been continuously so engaged since that time?

A. Yes, sir.

Q. 29. How far is the plant of the Tennessee Copper Company's from the line of the state of Georgia.

A. Well, I do not suppose it is more than a quarter of a mile.

Q. 30. It is just inside of Tennessee, then?

A. Yes, sir, just inside of Tennessee.

Q. 31. I believe the town or village that has sprung up around there is called Copperhill?

A. Yes, sir.

Q. 32. Where is the plant of the Tennessee Copper Company located with respect to the Ducktown Copper Company's plant?

A. At about two or two and a half miles southwest.

Q. 33. Making the plant of the Ducktown Company how far north of the Georgia line?

A. Well, from two and a half miles, I suppose from that to three, I do not know just the distance.

Q. 34. When did the Tennessee Copper Company begin to operate; did it at the beginning practice open heap roasting?

A. Yes, sir.

729 Q. 35. Which ceased to roast the ores in the open heap first, which of the two companies?

A. The Ducktown Company.

Q. 36. At the time the Ducktown ceased to have open heap roasting, did it have a stock of roasted ore on hand?

A. Yes, sir, my understanding. I never saw the stock of ore.

Q. 37. Did you live there at that time?

A. Yes, sir, I lived there and that was my understanding.

Q. 38. Over what period of time did the Tennessee Company practice open heap roasting, after the Ducktown Company ceased?

A. Well, I do not know just exactly, but some year, or two, or three.

Mr. DRAKE: Note an exception to all this evidence given, please sir, on the grounds formerly stated, and for the reason that it doe-not relate to the changed conditions since the decree in the cause, in 1907.

Q. 39. Was all the sulphur eliminated from the ores when they were roasted in the open heaps?

A. No, sir, they were not.

Q. 40. When those ores were gathered from the heap and taken to the smelter and run through there, were they or not, heated to the point where they would melt?

A. Yes, sir.

Q. 41. And in that melting process which is called smelting, was there or not sulphur content eliminated into the atmosphere?

A. Yes, sir.

Q. 42. Where was that sulphur content eliminated, at what point did it go out of the stack, or where?

A. Yes, sir, it went out of the stack of the furnace.

Q. 43. Was it all sent out, or part of it pass off in the mat?

730 A. I suppose that there was some little percent left in the mat. I do not know just how much.

Mr. DRAKE: Except to the question and answer, because the question is leading, and the answer is irrelevant and indefinite and hearsay.

Q. 44. Did you live at Ducktown continuously, I mean in the Ducktown region, from the time the Ducktown Company began operations, until the present time?

A. Yes, sir.

Q. 45. Now, about what size is that territory in Polk County, known as the Ducktown basin, or just simply referred to as the "Basin"?

A. Well, it covers an area I suppose, of eight or ten miles.

Q. 46. How many miles across each way, the longest way, and what is the diameter from north to south?

A. Well, I would say it was about from nine to ten miles.

Q. 47. And what is it from east to west?

A. Well, it is probably twelve miles.

Q. 48. What forms the Basin, what forms the rim of the Basin, I mean?

A. The mountains surrounding it, the big fork, and the little fork, and the Pake Mountains form the Basin.

Q. 49. Isn't there a water course that runs through the Basin?

A. Yes, sir, the Ocoee River and its tributaries.

Q. 50. How far from the banks of the Ocoee River is the smelting plant, and the stack of the Tennessee Copper Company?

A. It is three or four hundred *years*.

Q. 51. What is the height*h* of the stack of the Ducktown Copper Company at the present time?

A. Well, it is about seventy-five to eighty feet I suppose.

731 Q. 52. Has that stack been increased or decreased in height*h* since the company began operations in 1891, or is now about the same height*h* it has always been?

A. About the same height*h* it has always been.

Q. 53. What about the stack of the Tennessee Copper Company, has that always been the same height*h*?

A. No, sir. I do not know just what year, but they increased the height*h* of the stack until it is three hundred and odd feet, I believe in 1904 or '05.

AGREEMENT.—It is here agreed that the stack of the Tennessee Copper Company is — feet high, and that it was put in operation in — 19—?

Q. 54. Has the Tennessee Copper Company been operating with that tall stack since it was blown in?

A. Yes, sir.

Q. 55. To what extent have the ores treated by the Tennessee Copper Company been converted since 1906, and '07, or thereabouts, if you know; I am asking as to whether they have been run into a mat, or whether they have been refined, if you know, tell us?

A. I do not know what they have done all the time, I know they made almost pure copper, but I cannot say as to what they have done all the while. I do not even know what they are doing right now. I do not know what percent copper they are making at the present. They have converted them, they did convert the ores into almost pure copper.

Q. 57. Since 1907, has there or not been a period of time when the mat of the Ducktown Company was shipped over to the Tennessee Copper Company's plant, to be converted into pig?

A. Yes, sir.

Q. 58. Do you know what period of time that course was followed?

732 A. No sir, I could not tell you just the length of time they did. I know they bought and shipped it to the Tennessee Copper Company's plant. For the past twelve or fifteen months, what has been done with the mat that has been made by the Ducktown Copper Company? Well, I worked at Isabella, at their plant a part of the time, and they are shipping it away, but I do not know just where. They are loading it into railway cars and shipping it.

Q. 59. Has the Duckton Copper Company ever had a refinery and refined its ores into copper pig?

A. No, sir.

Q. 60. When was the acid plant of the Ducktown Copper Company, the sulphuric acid plant put into operation?

A. I believe, I do not know just when it was blown in, but I think it was blown in in 1907 or '08.

Q. 61. Do you recall whether it was during the year 1909 that the sulphuric acid plant was put into operation?

A. Yes, sir, I am satisfied it was put into operation then, because I worked on the construction of the plant in 1908.

Q. 62. Do you know when the acid plant of the Tennessee Copper Company was put into operation?

A. Well, it was some time later. I do not know whether they started in 1910 or '11, I am not sure.

Q. 63. Do you think the Tennessee Copper Company's acid plant was placed in operation after the other one, or before?

A. Afterward if I am right,—before,—no, I will take that back, I was mistaken, it was before.

Q. 64. Mr. Witness, how close have you lived in an average to the plant of the Ducktown Copper Company, since July, 1907?

A. I have lived about a mile and a half from the plant, the same place I am living now.

Q. 65. And during this time, have you frequently or not been to

the plant of the Tennessee Copper Company at Copper Hill?
733 A. Well, I have passed by the road, by it, but I have not been up on the plant, around the plant very much, occasionally, but not very often.

Q. 66. Have you travelled in and out of the Ducktown Basin frequently, and over the Basin since 1907?

A. Yes, sir.

Q. 67. What would you say is the relative size of the operations of the two companies, their furnaces and the acid plant?

A. Well, I know that the Tennessee Copper Company's plant is very much larger than the Ducktown Company's. I have been in the plant, through it.

Q. 68. How many furnaces has the Tennessee Copper Company?

A. Well, I am not sure about that. My understanding is they have seven, but I am not positive about that. I have not been on the plant right recently.

Q. 69. How do they compare in size with the furnaces of the Ducktown Company?

A. Well, the furnaces that the Ducktown Company has now and them, there is not very much difference in the size.

Q. 70. How many furnaces has the Ducktown Company?

A. Well, it has two furnaces, they have one partially torn out at the present time, I understand.

Q. 71. Do you know whether or not since 1907, during the going season, whether they operated but one furnace?

A. Well, I could not say about that, no. It has been my understanding, but I do not know positively.

Q. 72. Now, tell us since the acid plant of the Ducktown Company has been in operation, whether they have made much or little sulphuric acid?

A. Well, I have worked there at the plant some, and I have seen them loading from three to four cars of acid a day.

Q. 73. Is that acid loaded into steel tanks?
734 A. Yes, sir.

Q. 74. One tank to a car?

A. Yes sir.

Q. 75. Where is it shipped to, do you know?

A. No, sir, I do not know where they ship it to.

Mr. DRAKE: I except to that question and answer because that is an opinion, and the company can furnish the best evidence and give us the exact proof, or ought to at least. There is better evidence in the books and records of the company.

Q. 76. State whether or not the shipments of acid are daily?

A. They are not every day.

Q. 77. State whether or not the method of operation, the extent and volume of operations, have been substantially the same since 1907?

A. Yes, sir.

Mr. DRAKE: We except to that also, as it is purely a conclusion and an opinion, and he is not an expert and has not qualified as such.

Q. 78. Since the acid plant of the Ducktown Company was placed in operation, and since the plant of the Tennessee Company, the acid plant has been operating, what has been the condition of vegetation, in the Ducktown Basin, has it improved or not?

A. Yes sir, it has improved.

Q. 79. Before the open heap roasting was ceased, to what extent had the wood or timber been cut off the Ducktown Basin?

A. Well, a great deal of it had been cut off.

Q. 80. What was done with the wood?

A. It was used to roast the ores, and for firewood, and so on.

Q. 81. Since these acid plants were installed, what has been the general course as to gardening and the growing of grain
735 and vegetables in the gardens of the citizens living there, throughout the Ducktown Basin?

A. Well, since the acid plants have been in operation quite a good many people raise gardens in and around Ducktown, fruit trees and so forth.

Q. 82. Have you or not seen tomatoes growing in the Ducktown section?

A. Yes, sir.

Q. 83. Peaches?

A. Yes sir, I have raised peached myself.

Q. 84. What size do they grow?

A. I think I have raised as fine peaches as I ever saw grow anywhere in North Georgia, or any other country.

Q. 85. What years have you grown your peaches, Esquire?

A. Well, I have had some peaches now continuously for eight years, except one year when they were killed by a frost.

Q. 86. What was the condition of gardens and fruit in the Ducktown Basin during the year 1913,—last year?

A. I had a splendid crop of peaches. I did not raise any garden myself, but my neighbors who live right around me had gardens which were pretty fair.

Q. 87. What kinds of vegetables are grown in the gardens?

A. I saw men just across the street up there, two or three men have gardens this year, that would have beans, cabbage, tomatoes, potatoes, and corn and such.

Q. 88. What village do you live in, 'Squire?

A. I live in Hiwassee, Ducktown postoffice.

Q. 89. And what is the name of the postoffice at the site of the Ducktown Copper Company?

A. Isabella.

Q. 90. During the time that the open heap roasting was practiced, and up to the time the acid plants were put into operation, was it possible to raise vegetables, gardens and fruit, in the section where you live, and throughout the Ducktown Basin, 'Squire?

736 A. I do not think there was a living tree of any kind. I am sure there was not, nor down in there could you raise any kind of garden vegetation.

Q. 91. What is the difference in population, if any, since the

companies began the operations? What is the population of what is known as the Ducktown section now?

A. Well, I suppose there is ten to twelve thousand people in the Basin, close to that. I taken the census for part of my district in 1912 for the United States.

Q. 92. Before the operations were commenced there, what was the population of the Basin, before the smelting operations?

A. I do not think it would exceed from ten to twelve hundred people.

Mr. DRAKE: We except to the question and the answer as irrelevant.

Q. 93. How are those people in the main maintained, how do they subsist?

A. From the mines and operations.

Mr. DRAKE: For the same reason we object to that question and answer.

Q. 94. Have you been over the territory in Georgia immediately adjacent to the Ducktown Basin?

A. Yes, sir.

Q. 95. How recently, and how often?

A. Well, I have not been over it since last year. I think for the last three or four years previous to that, I have been over the country every year.

Q. 96. How extensively have you observed, and what has been your opportunity for observing that North Georgia territory adjacent to Tennessee, and directly adjacent to the Ducktown Basin?

A. Well, I have been all over the land of the different owners there, and in Fannin County and Gilmer County, and part
737 of Pickens County, for the purpose of ascertaining what the damage was to the lumber, timber and vegetation.

Q. 97. Were you sent out as a member of a party for the express purpose of taking observations as to whether damage was being done?

A. Yes, sir.

Q. 98. And that you say has been during the last three or four years?

A. Yes, sir.

Q. 99. Probably what number of days would you spend on a trip in making these observations?

A. Well, last year I believe we were out at one time probably twenty days, and I was out at other times a day or two at a time. I do not know just how many days.

Q. 100. Were you a member of the party composed of Mr. Shiflett, who for a number of years, has been chief mining inspector of Tennessee?

A. Yes, sir.

Q. 101. And were you with Prof. Bane of the University of Tennessee at the time?

A. Yes, sir.

Q. 102. And with Mr. Hughes, a brother of Judge Hughes of the court of Civil Appeals of Tennessee?

A. Yes, sir.

Q. 103. What did you find to be the conditions of crops, vegetation and timber in this section of Georgia, that lay immediately adjacent to the Ducktown Basin, the Ducktown section?

A. We found the crops and vegetation more in advance of anything I expected to find as far as conditions were concerned. The fact was, if there was any smoke damager there, I never saw it.

Q. 104. From your experience, do you think you would have been able to detect damage if there had been any to the
738 crops and vegetation in that Georgia section?

A. I think I would.

Q. 105. Did you go out especially for the purpose of ascertaining the damage done to the land of a Mr. Vestal, and his son, who are having some litigation with the Ducktown Copper Company?

A. Yes, sir.

Q. 106. And did you or not go over various other lands in North Georgia circuit, near to this Basin?

A. Yes, sir, we had to go over other lands in order to get from one to the other.

Q. 107. What quality of apples did you find in the section that you travelled?

A. The apple crop was not so good last year as it was the year before. The year before that was the finest apples I almost ever seen.

Q. 108. What seemed to be the trouble last year?

A. Well, I do not know, the trees were not full. I do not know whether frost or what was the cause of it. The apple crop was not so good, anywhere I saw it, in that section of the country, as it was the year before.

Q. 109. Do you know whether the apple crop in North Georgia varies?

A. I think it does, anywhere that I ever observed.

Q. 110. What was the condition of the corn crop, during the last three or four years, and other grain in the North Georgia section?

A. The crops were in splendid condition, those that I observed, of course occasionally you will find poor land, and very poor crops. But if you have good land you have good crops.

Q. 111. Do you know whether or not there were late frosts in the spring of 1913, in that section?

A. Yes, sir. There was not a good fruit crop in the mountain country either.

739 Q. 112. Due to that fact?

A. Yes, sir, except an occasional orchard that was sheltered in some manner.

Cross-examination.

By J. A. DRAKE, Esq.:

Q. 113. What is your occupation, Mr. Maughan?

A. I am construction foreman on the pike road at the present time for Polk County.

Q. 114. What has been your occupation before that?

A. Well, I have been construction foreman for the Copper Companies at different times, and for the country also in building roads.

Q. 115. How much time have you, since you have been construction foreman on the roads devoted to that?

A. How is that?

Q. 116. How much time have you devoted to your road construction as foreman?

A. Well, I worked on the pike road year before last a part of the year, and a part of the year before that, almost continuously.

Q. 117. Last year?

A. Yes, part of last year and then I have been working on the pike road again now for six or eight weeks since they began building.

Q. 118. The other part of the year what did you do?

A. I worked part of the time for the Ducktown Company. No, no—that was all the work I did last year. A part of this year I worked for the Ducktown Company.

Q. 119. Now, I did not exactly understand what you meant about last year you say you worked for the company, explain that?

A. I worked on the roads I said, last year, that is about the kind of work I did, pike road, and this year, I worked a part of the time for the Ducktown Company.

740 Q. 220. That is what I am trying to get at, how much time did you devote to this company last year?

A. To the Ducktown Company, oh, the number of days we were out, probably about twenty odd days that we were out in the timber.

Q. 221. How long have you been in the employ of the Ducktown Copper Company; since you first began working for them?

A. I have been out inspecting timber from year to year, not every year, but occasionally from 1906,—four.

Q. 222. 1904?

A. Yes, sir.

Q. 223. Well, what was the first day that you were out?

A. Well, I could not give the date exactly. I have forgotten. I have got a record of it, but I have not got my book here and cannot give you just the date.

Q. 224. You cannot give me anything near the date?

A. Well, it was in the fall, but I could not give you just the date.

Q. 225. Where did you go to the first time?

A. I went on to Jacks River.

Q. 226. Whose farm?

A. Nobody's.

Q. 227. Who was with you?

A. Mr. Reese, Mr. Shiflett and Miller, and Witt and others.

Q. 228. How far in Jacks River from the Ducktown Copper Company?

A. It is about twelve or fourteen miles.

Q. 229. Where did you go from there the next day?

A. We camped on Jacks River for a period of about something like twenty days.

Q. 230. Twenty days?

A. Yes, sir.

741 Q. 231. State if you stayed right there in that same neighborhood?

A. Yes, sir.

Q. 232. And from there did you go back home?

A. No, sir, we broke up camp there and went to above Ellijay, on the head of the river, and examined some property up there.

Q. 233. What property up there?

A. The property that belonged to Vestal.

Q. *224*. Whose property were you examining on Jacks River?

A. The Vestal Lumber Company.

Q. *225*. Did you examine anyone else's land except that while you were out on that trip?

A. No, we did not examine anyone elses except that, but we had to go through quite a good deal of other land.

Q. *226*. You were employed specially, were you, Mr. Maughan, for that particular lawsuit that Mr. Vestal had against the company.

A. Yes, sir.

Q. *227*. And then you went out specially, as I understand, to observe the damage to the various forests around you?

A. Yes, sir.

Q. *228*. And you could not find any damage in all that trip to the timber?

A. I never saw any smoke damage that I could feel like knowing that the smoke had done it. There was some dead timber of course.

Q. *229*. You say there was plenty of dead timber in there?

A. There was some dead timber in the country, of course, already dead, and I could not tell what killed it.

Q. 240. You could not tell what killed it, but there was plenty of timber there dead?

A. There were evidences of something on the foliage of the timber.

742 Q. 241. You did not go further out there at Mr. Vestal's insistance, did you?

A. No, sir.

Q. 242. And you did not go over there at the time he said the damage was done, did you?

A. I do not know about that, I suppose if it was damaged at all, it would be damaged all the while.

Q. 243. Don't ou know, Mr. Maughan, that this smoke damage

is easy to detect soon after it strikes a tree, or foliage or vegetation and *blithe* it?

A. Yes, sir, I know that.

Q. 244. And don't you know that is the very time to observe it?

A. Usually if it strikes the tree and damages it, you can tell it for quite a time, and it does not go off in a day.

Q. 245. And it has the effect of killing it too, doesn't it?

A. Yes, sir, it does sometimes.

Q. 246. And the trees you saw all through that country that were dead, may have been caused by smoke, might it not have been?

A. I do not think so.

Q. 247. On this trip you speak of, did you stop with any citizens over in Georgia, if so, who?

A. Yes, sir, when we were up above Ellijay, we stopped with Mr. Clayton.

Q. 248. Mr. who?

A. Clayton.

Q. 249. Do you know his given name, you say you stopped with Clayton?

A. Yes, sir, up on the river.

Q. 250. Don't you know that Mr. Clayton did not live up there at all?

742½ A. Above Ellipay?

Q. 251. Yes.

A. Yes, sir I call it up above, up on the river, Mr. Clayton is nine miles above Ellijay.

Q. 251. Which one of the Claytons was that?

A. I do not know how he signs his name.

Q. 252. Was that the county surveyor of Gilmer County?

A. The one that used to be county surveyor, yes, sir.

Q. 253. Where else did you stop while up there?

A. We stopped two nights with Mr. Clayton.

Q. 254. Where did you go to and who did you stop with?

A. We came back to Epworth, and I stopped all night with Mr. Cochrane.

Q. 255. Do you know which one of the Cochranes?

A. I do not know his given name, but he lives up east, a mile or so from Epworth.

Q. 256. Did you take dinner with somebody or not while out there, when you were on that trip, if so, who, the postmaster up there at A-1, do you remember man named Johnson, do you remember eating dinner with him?

A. I do not think so, I do not remember it.

Q. 257. Now, didn't these people tell you of damage and endeavor to point it out to you.

A. How is that?

Q. 258. Didn't these people with whom you stopped, point out to you damage done by smoke?

A. No, sir.

Q. 259. A lot of them did?

A. They didn't to me.

Q. 260. Did you try to find out any damage from these people.
A. I tried to find out damage myself, if there was any done, that was what I was out there for.
743 Q. 261. Did you ask the people about any particular damage that had been done to them, and try to get information that way?
A. Yes sir, I talked to lots of people.
Q. 262. Who? Who were they, name one you talked to and asked about it?
A. I talked to various parties in the Tacoea River Company, I cannot tell.
Q. 263. Commence and tell us just one?
A. I talked to Mr. Ritchie and others.
Q. 264. What Mr. Ritchie?
A. The postmaster at A-1.
Q. 265. That is one; who else did you ask?
A. Dozens of men, I could not give you the names, lots of them. I did not know at all, didn't try to find out who they were.
Q. 266. Cannot you remember one more that you asked about it, did you ask so many?
A. I might remember one more, but I would not be positive. I talked to so many I would not be positive.
Q. 267. Just tell us two more men you talked with up there, and I will be satisfied, if you talked to so many, can't you tell us one?
A. I talked to Mr. Payne.
Q. 268. Which one of the Paynes was it, Moses Payne, that you talked to?
A. I never asked him his given name.
Q. 269. Where does he live?
A. He lives in Hell Hollow.
Q. 270. Well, you do not know his given name, do you?
A. I talked to Mr. Higdon.
Q. 271. Which one of the Higdons did you talk to?
A. He is a preacher, I do not know his name.
Q. 272. Where did he live?
744 A. I do not know the names of the different localities in there. He lived on the waters of the Fighting Town Creek.
Q. 273. Who else did you talk to?
A. I heard men say they had been damaged in years previous.
Q. 274. Don't you know that this man Higdon, that you spoke of, the preacher, was hired by your party, and was one of your party at that time?
A. Mr. Higdon was—He surveyed out the lands there and taken us over them.
Q. 275. Why did you name him as a man, when he was hired on the same business that you were hired for?
A. Well, a man being hired, I consider a man being hired to do a certain job of work, he can do it as honestly, and is just as honest and nice a man as any other man.
Q. 276. I wish you would give me the name, or names of some

people that were not hired by this company, and not members of your party, if you can give them?

A. I have given you all the names I can.

Q. 277. Did Johnson, the postmaster at A-1 tell you of any damage?

A. I do not remember if he did. I would not care to tell you so if they said so, because I know lots of people over there who claimed that they have been damaged, when they have not had any damage done.

Q. 278. I will ask you if it is not a fact that Johnson, the postmaster did not point out smoke to you, and show it to you at the time, and you could not recognize it, and would not agree to it, cannot you remember that?

A. Now, if he did I do not remember it at all. I do not remember a bit of it if he did. I would say this, if he did, or tried to, I would not care to say at all.

Q. 279. How many times have you been a witness for this
745 Copper Company.

A. Well, I have been a witness quite often. I could not give you the number of times.

Q. 280. And the garden that you spoke of raising, and your neighbor raising, is not in the state of Georgia at all, as I understand, but about four miles and a half from the state line, isn't it?

A. Yes, sir, about a mile and a half nearer the Copper Company's plant.

Q. 281. That is what I understand, and immediately north of the Copper Company's plant, as I understand?

A. I am about north of the plant where the southern wind ought to bring the smoke.

Q. 282. All you know about the conditions in Georgia are when you are hired by the company to go over there, when they had a lawsuit with Mr. Vestal?

A. I have been in Georgia lots of times when I was not hired by the company.

Q. 283. How is it Mr. Maughan, that you can remember with such detail how this old company operated its plant, and all the different methods, and you cannot remember last year, the men you met over in Georgia on that trip, and you were a boy during the time this old company operated?

A. Well, I will explain that this way. There are a great many things happened when I was a boy that I remember a great deal more distinctly than I do things that happened last week. I do not know why it is I have got my notes on this Georgia matter, but I am very poor on remembering names, but I could sit down and think probably, and give you twenty-five men I have talked to in that country about smoke conditions, probably more than that.

Q. 284. But, I said you can remember the date that these old companies operated, and everything like that, but cannot remember the date you were over in Georgia last year?

746 A. Well, I did not give any date accurately on the old company's work.

Q. 285. How do you know that under the old method that the sulphur was released into the air, and that under this new method it is let into the mat?

A. I know that the old company made mat, that was copper, that was almost pure copper, because I have seen it handled, handled it, and I know that it was almost pure copper.

Q. 286. But you are no expert?

A. I am no expert, no, sir. I can tell pure copper almost when I see it.

Q. 276. Now, Mr. Maughan, the garden you spoke of over where you lived at Ducktown Station?

A. At Ducktown proper.

Q. 277. At Ducktown, that is the name of it?

A. Yes, sir.

Q. 278. I will ask you if there is not quite a high mountain between that and the Ducktown Copper Company's present plant?

A. No, sir. I have built a pike road right down from our town to the Ducktown Company's plant, and I do not suppose there is a grade of three percent going towards Isabella on the line of roads, probably not more than two percent.

Q. 279. But, don't you know, Mr. Maughan, that the roads crook around and that those houses there at Ducktown are back in a cove, and that a mountain lies right back of them, and protects them from the smoke?

—. ——.

A. The Copper Company's plant is between Ducktown and the mountain?

A. Yes

Q. 280. You say there is no mountain between those houses at Ducktown and the company's plant? An air course, I mean?

A. No sir, there is some ridges and hills, but in an air course, there might be a range of hills, but no mountain.

Q. 281. Well, hills isn't it, a high hill three or four hun-
747 dred feet high?

A. Yes, there are some high hills and ridges between the Ducktown Company and Isabella.

Q. 282. And is not it a fact that where a section is protected by mountains, that vegetation will grow on that spot, and on the opposite side, next to the plant, it will be entirely denuded of vegetation?

A. I did not get that.

(Question read.)

A. Yes, there is some truth in that. But there is no mountain between Ducktown and Isabella.

Q. 283. Will you please describe the effect of these fumes on vegetation in detail?

A. Well, when the smoke settled down in the country, you do not notice the effect of the smoke until likely the smoke clears away, and the sun comes out, and it parches the leaves of the vegetation almost like frost, turns white, or the parts that are affected.

Q. 284. How soon after will the effects show up on growing vegetation?

A. It will show up almost immediately after the sun shines on it.

Q. 285. You mean, that is on forests, and any other green vegetation?

A. Any other vegetation that it has effect on it, yes, sir.

Q. 286. Were you one of the parties that examined J. Y. Allen's farm up near Blue Ridge?

A. We examined a corn crop up there once. I do not know, I do not know who the corn belonged to, or who the land belonged to. I was there with a party that looked at a corn crop.

Q. 287. When was that?

A. I believe that was in 1912.

748 Q. 288. I will ask you what report you made on that, and what did you swear about it in that case of Shippen versus Ducktown Copper Company, in regard to Allen's corn?

A. I do not remember that they asked me any question about the corn crop, I do not believe they did.

Q. 289. I will ask you if you did not swear that there was eighty bushels of corn in your judgment, on that land?

A. I may have done that, I believe there was. I believe there was.

Q. 290. Well, will you swear that as a fact, that there was in the neighborhood of—you know something about corn?

A. I will swear that I believe there was, that is as far as I can swear about it. That is my opinion. I know one thing, I could tell you good and proper and plain, it was about as fine a crop of corn as I ever looked at.

Q. 291. Mr. Maughan, when you were on this trip of inspection for the Copper Company, you let the people through there know what your business was, did you?

A. We did not hide out, we were open.

Q. 292. Please answer the question.

A. We were open and above board, and told lots of people what we were doing. We did not get out and tell people all over the country that was what we were out there for, or course, but we told lots of different citizens.

Q. 293. I will ask you if you did not tell the people generally throughout that country that you were there inspecting a route for a new railroad?

A. How is that?

Q. 294. Did you not generally tell the people throughout that North Georgia country where you were, that you were there inspecting a route for a new railroad?

A. I do not have any recollection that I told anybody that. I may have told them, but if I did, I do not remember

749 anything of it. I did hear some of the crowd say they had told some fellows that.

Q. 295. Do you know the altitude relative to the Tennessee Copper Company, and the Ducktown Company?

A. No, sir, I could not give it definitely.
Q. 296. I will ask you if it is not higher?
A. The Ducktown Company's?
Q. 297. Yes.
A. No, but I imagine there is not very much difference in the altitude, but I am not sure about that, from the base of the tracts where the difference would be.

Mr. DRAKE: That is all, I think.

Redirect examination.

By W. N. MILLER, Esq.

Q. 298. What particular position do you hold, or have you held in your county, 'Squire?
A. You know I don't hold any. I was justice of the peace for sixteen years.
Q. 299. For the Ducktown section?
A. Yes, sir.
Q. 300. By whom were you engaged to do this pike road building on behalf of the County?
A. I was engaged by Mr. Cox, superintendent of pike road construction, a Chattanooga man.
Q. 301. Did you have any other purpose, mission or instruction when you went out at the instance of the Ducktown Copper Company, in the North Georgia Section, except to honest ascertain and truthfully report the facts and conditions as you found them?
A. That is all the instructions I had.
Q. 302. Did you have a penny's worth of interest in the results one way or the other?
A. No, not a penny.
Q. 303. Did you, to the best of your skill and ability,
750 discharge the duty for which you were sent out?
A. I did.
Q. 304. State whether or not your associates, so far as you observed were honest and conscientious in the discharge of their duties?
A. I think every man was.
Q. 305. Was their any efforts of concealment, or any evidence of concealment, or bad faith practiced by any of the parties so far as you know?
A. Not a thing.
Q. 306. In going to the Jacks River section, from what point did you start, and what route did you take to get to Jacks River?
A. I was working on the pike road at the time, and I was working at the Tennessee Copper Company's plant. The wagons came along and picked me up, and I went through Copperhill, and through Fighting Town Creek, across the Blue Ridge, and to a fellow by the name of Jones, on Jacks River.
Q. 307. What general direction did you travel to Jacks River,

from the site of the Tennessee Copper Company's plant to reach the Jacks River camp?

A. It is almost west.

Q. 308. State whether or not after fixing this camp on Jacks River, your party rode in all directions from that camp?

A. Yes sir, in every direction.

Q. 309. Probably how many miles would you travel daily throughout the various forests, and places there in an effort to ascertain the conditions?

A. Well, we would probably on an average,—ten or twelve miles mountainous country, rough country.

Q. 310. Did you have horses?

A. Yes, sir.

Q. 311. Did you ride all the time?

A. No, sir, a good deal of the time in many places, we
751 would have to get down and walk through the ruts.

Q. 312. Did you or not on this trip, pass over the sides of the hills and the mountains that faced the Ducktown Basin?

A. Yes, sir.

Q. 313. If there would be any damage done — smelting operations in that North Georgia section, on which sides of the hills and mountains would it be visible?

A. It ought to show up on the east side of the mountain.

Q. 314. That is, if it faces the Basin?

A. Yes, sir, if it faces the Basin.

Q. 315. In what condition did you find the crops and timber on the side that faced the Ducktown Basin, there in North Georgia?

A. I actually in that country there, never saw a brown leaf that I thought the smoke burnt.

Q. 316. What condition did you find the apples and the corn crop in, and the gardens?

A. As I said a while ago, the apple crop was not so good last year as the year before. They had the finest apples through that country I thought I ever saw grown.

Q. 317. In 1912?

A. Yes.

Q. 318. From what locality did your camp and party get their supplies of vegetables and fruit while they were out those twenty odd days, in that Jacks River section?

Mr. DRAKE:—Note an exception to the question and answer, for the reason that this is original proof, and should have been brought out in chief, and the proof is but a repetition of what has been gone over, for that reason also, I object to it.

A. Well, we bought produce from the country people around about us.

752 Q. 319. And what was the character of the produce that was thus brought in from the farmers?

A. Mighty nice potatoes and tomatoes.

Q. 320. Good quality?

A. Yes, sir.

Q. 321. Now, Mr. Vestal's land, *who* land you went out especially to inspect on that trip, I will get you to state whether or not he claimed a large domain and very much scattered in that North Georgia section?

A. Yes, sir.

Q. 322. How close were the nearest lands of his to Ducktown?

A. I suppose he had some land within two or three miles of the Tennessee Copper Company's plant.

Q. 323. Did he himself live on a tract of his land up at Epworth?

A. Yes, sir.

Q. 324. How far is Epworth south from the plant of the Tennessee Copper Company, how far from that point to the other?

A. It is not more than two or three miles.

Q. 325. Mr. Vestal and his son. claimed thousands of acres through that section?

A. Yes, sir.

Q. 326. State whether or not they were all contiguous or are there intervening *lens* between them.

A. There are intervening *lens* between them.

Mr. DRAKE: We except to that because it is original evidence, and should have been brought out in chief.

Q. 327. What did you say about the southern wind-, what would they be supposed to do if there was any fumes around from the Ducktown plant?

A. How is that?

Q. 328. In your cross examination, I believe you said something about the winds blowing from the south, what effect
753 would they have?

Mr. DRAKE: I object,—I beg your pardon, I did not go into that at all.

Mr. MILLER: I asked the witness what he said, and if so, to tell us what he said, what effect the southern winds would have, if there are any fumes arising from the Ducktown plant?

Mr. DRAKE: We except to the question, because nothing has been brought out in chief, or on cross examination about the southern winds or the effects they would have, and it should not be brought out in rebuttal.

A. My answer to him was that I lived north of the Ducktown Company's plant, and that if there was a south wind, it would blow the fumes over there on my place.

Q. 328. From what general direction do the winds blow generally in the Ducktown Basin, during the growing season?

A. They are north and south, either from the north to the south, or from the south to the north.

Q. 329. If they were blowing from the south, as I understand, they would bring the fumes right over where you live?

A. Oh yes.

Q. 330. When you made the statement on cross examination

about the old process of refining these copper ores, did you refer to the Union Consolidated Company?

A. Yes, sir.

Q. 331. How far is Ducktown Station, which I understand is on the L. & N. Railroad, from Ducktown postoffice, which you call Hiawasse?

A. Well, the pike road is about two miles, the air line I suppose would be about a mile and a quarter or a mile and a half.

Q. 332. State whether or not there are various ranges of hills between the plant of the Ducktown Company at Isabella and this North Georgia Section, or Jacks River Section?

754 A. Yes, sir.

Q. 333. State whether or not there are some large mountains intervening,—before you reach the Jacks River section and North Georgia proper?

A. Yes, sir, the Blue Ridge between Jacks River and the Copper plant.

Cross-examination.

By Mr. DRAKE:

Q. 334. What do you mean when you say grownig season?

A. How is that?

Q. 335. What do you mean by growing season?

A. I mean the summer time.

Q. 336. From when to when?

A. Well, it is in different countries, it is different times, in our country it begins in May and ends along in September and October.

Q. 337. I speak with reference to the North Georgia section of that country?

A. Well, that is about the season, because it begins about the last of April and closes with September.

Further this deponent saith not.

The distance travelled by this witness to and from his home to the place of taking depositions, was 228 miles.

755 JASPER M. CENTER, the next witness, being first duly sworn, upon examination, deposed as follows:

Direct examination.

By W. B. MILLER, ESQ.:

Q. 1. How old are you?

A. I am fifty-nine years old.

Q. 2. Where do you live?

A. Ducktown.

Q. 3. Ducktown Station, or Ducktown postoffice?

A. Ducktown proper.

Q. Well, that is Ducktown postoffice.

A. Yes, sir.

Q. 5. How long have you lived there or in that immediate section?

A. Well, I have been born and raised there outside of about thirteen years of my life.

Mr. DRAKE: You will have to talk louder.

A. I have been there all my life, but about thirteen years.

Q. 6. When were you away from there?

A. During the shut-in of the mine.

Q. 7. That was before the Ducktown Company began to operate?

A. Yes, sir.

Q. 8. What business are you engaged in?

A. Livery business.

Q. 9. How long have you been a livery man?

A. How is that?

Q. 10. How long have you been in the livery business continuously?

A. About twenty-two years.

Q. 11. Did you have occasion in the year 1912 or 1913, one or both, to visit the North Georgia section of the country, at the instance of the Ducktown Copper Company?

A. Yes, sir.

756 Q. 12. Probably how many days were you out on either trip and how many trips did you make?

A. I do not remember, but I think I was out about eight days on one trip, and I do not remember the other, five or six days, but I do not remember the days exactly.

Q. 13. What year?

A. I believe that has been a year ago, one or two years ago.

Q. 14. How many trips were you out?

A. I was out two trips.

Q. 15. What sections of the country did you travel over?

A. Well, out of Ducktown into Georgia towards Ellijay and Jacks River, and Cowpen Mountain, around through that way, towards the Blue Ridge.

Q. 16. Did you go from Ducktown out into and through the section of country that lies immediately south of the Tennessee line in North Georgia?

A. Yes, sir.

Q. 17. Provided with horses?

A. Yes, sir.

Q. 18. Whose land, especially, were you inspecting, or looking over at that time?

A. Well, we were looking over the Shippin Brothers' land *and* one time, and Vestal's land.

Q. 19. That is J. P. and J. A. Vestal?

A. Yes, sir.

Q. 20. And Shippin Brothers, the land that belonged to Shippin, one of whom is present here today?

A. Yes, sir.

Q. 21. Now, in travelling through that section of country from

one body of these lands to another, could you take observations of the timber, vegetation, crops and gardens, generally?

A. Yes, sir.

Q. 22. During what seasons were you there?

757 A. What season?

Q. 23. Yes, what month?

A. I do not,—I believe in September or October.

Q. 24. What condition did you find the crop and gardens in?

A. I did not see anything wrong with them.

Q. 25. How did you find the grain and apples, corn and other grains and fruit?

A. They were good.

Q. 26. Have you frequently seen the effect of smoke, called sulphur smoke, that issues from the roasting yards and from the stacks of those furnaces; have you witnessed the effects of that on vegetation?

A. Yes, sir.

Q. 27. Do you know how it effects timber and crops when it strikes it?

A. Yes, sir.

Q. 28. State whether or not you detected any damage of that character in the North Georgia Section through which you travelled on these two occasions, that you were out?

A. No, sir, I do not think that we did.

Q. 29. State whether or not you were out at Mr. Vestal's home place, at Epworth, on this trip?

A. Yes, sir.

Q. 30. Were you at the camp on Jacks River.

A. Yes, sir.

Q. 31. Since the acid plants of the two companies were put in operation, say since 1908 and '09, what, if any, change, have you noticed in the condition of the crops, vegetation and timber in the Ducktown Basin, and North Georgia Section?

A. Yes, sir.

Q. 32. I say, what change do you find?

A. I find it better than it has been before, find a good

758 condition.

Q. 33. You say you live in Ducktown, the village called Ducktown, the Ducktown postoffice?

A. Yes, sir.

Q. 34. State whether or not crops of vegetables are raised in the village of Ducktown, and in that immediate section?

A. Yes, sir, sure.

Q. 35. What character of vegetables and fruit are grown there, what kinds and what quality.

Mr. DRAKE: Wait just a moment, I except to that, because it is irrelevant and immaterial to the issues here, as to the conditions in North Georgia.

Objection overruled, and appeal prayed and granted.

A. There is peaches, tomatoes, cabbage, beans, onions, and rad-

ishes, and about all the garden vegetables that grow, they are raised there, I have raised them, not the peaches, but raised the others.

Q. 36. Now, how was it before the acid plants were installed?

A. We could not raise anything.

Q. 37. How were the crops that you saw in this North Georgia section, and the fruits that you saw there in 1912 or '13, as compared with the crops and fruits you saw in other sections of the country, hundreds of miles away from the Ducktown Basin?

A. So far as we seen in there, they are about the same.

Q. 38. Did they appear to be affected in any way as the result of the smelting operations, or the copper smoke?

A. No, sir, not that I could see.

Q. 39. Mr. Center, have you any stock, or any interest in the Ducktown Copper Company?

A. No, sir.

Q. 40. Did you have any object in view except to honestly
759 ascertain and faithfully report the facts as to the conditions that you found when you went on that trip.

A. No, sir.

Mr. MILLER: That is all.

Cross-examination.

By J. A. DRAKE, Esq.:

Q. 41. Mr. Center, had you worked for this company previous to last year when you were out of their employ?

A. No, sir. How long a time back?

Q. 41. Any time, and if so, when and how much?

A. Yes, sir, I worked for them I believe, about seven years ago.

Q. 42. Were you ever a witness for them before?

A. Yes, sir.

Q. 43. When?

A. I was a witness here in this Vestal case, and the Shippin Brothers' suit.

Q. 44. Were you even a witness before?

A. Yes, sir.

Q. 45. In what case?

A. For the D. — C. & I. Company.

Q. 46. Yes, in any of this copper business?

A. Yes, I was a witness in this lumber company case, the Wetmore Lumber Company, whatever you might call it.

Q. 47. Were you ever a witness for them in any other suit?

A. No, sir, not that I remember of.

Q. 48. Did you ever make an affidavit for them in any other case?

A. No, sir.

Q. 49. Did you make an affidavit in the case of The State of Georgia, vs. these two companies?

A. No, sir.

Q. 50. In the supreme court of the United States?
760 A. No, sir.
Q. 51. In the years of 1906 or '07, along about then?
A. No, sir.
Q. 52. You have not worked for them in any capacity from 1907 up to last year, as I understand you?
A. Up to the present time, I am not working any now.
Q. 53. You are working there now?
A. No, sir.
Q. 54. You worked for them last year some?
A. No, sir, I have not worked for the company in any way for seven years.
Q. 55. I am speaking of this inspection work, that is work, as I call it?
A. Well, that, I have done that.
Q. 56. How much of that have you done for them?
A. As I stated a minute ago, I do not know how many days, I stated from ten to twelve days.
Q. 57. Did you ever do any work for them outside of last year?
A. Yes, sir.
Q. 58. When was that, what years?
A. I cannot give you the year, it has been some ten or twelve years ago though, in this other case I was speaking of, with the Tennessee people.
Q. 59. The Tennessee people?
A. Yes, sir.
Q. 60. Who was doing this?
A. The Wetmore Lumber Company and some others got after this company you are speaking of.
Q. 61. You have been in their employ off and on for about ten years, as I understand?
A. No, sir, I have not. I have done some work.
Q. 62. I mean in the capacity of inspector, and doing actual work there around the plant?
761 A. Well, these three times.
Q. 63. Is your name James M. Center?
A. No, sir.
Q. 64. Is there a James Center up there?
A. Not that I know of, this is James H. Center.
Q. 65. James H. Center?
A. Yes, sir.
Q. 66. Do you know whether or not there is a James M. Center up there also?
A. No- that I know of.
Q. 67. When you were over on Jacks River last year, what citizen of Georgia did you speak with at any time?
A. I believe I stayed with a man there at Higdon Station, an old man by the name of Hallum, stayed all night with him.
Q. 68. Where does Hallum live?
A. He lives somewhere near Higdon Station, right down over there in Georgia.

Q. 69. Well, who else did you stay with or eat with while you were over there?

A. I believe a hotel in Blue Ridge, but I cannot call the name of the house, in the lower end of the little town on the railroad there, I do not remember the name of it.

Q. 70. Who did you stay with in the country, Mr. Center, or get dinner with? Do you remember getting dinner up there with a man named Jackson?

A. No, sir.

Q. 71. A-1?

A. No, sir, I never was at Jackson's.

Q. 72. Do you remember talking with Jackson?

A. No, sir.

Q. 73. Were you at A-1?

A. Yes, sir, I took dinner with that Jackson. I believe that is his name.

762 Q. 74. You took dinner with him?

A. Yes, sir, I believe I took dinner with him.

Q. 75. Did not any of these men you stopped with, or talked with, point out damage to you?

A. No, sir.

Q. 76. You say none of them did?

A. No, sir. I just taken dinner with Jackson. He was not away from his house with me.

Q. 77. Didn't Jackson go up on the hill there, on the side of the mountain and point out damage to you, and point out the smoke?

A. No, sir, the only thing I knew of Jackson doing, he was busy selling our boys whiskey while I was there, that was all he pointed out to me.

Q. 78. You bought some of it didn't you?

A. No, sir.

Q. 79. None of your party did not buy whiskey from him?

A. I do not know who bought. I seen him trying to sell some to parties coming there who were not with us at all.

Q. 80. I will ask you if some of your men, Higdon, that preacher, did not buy some and get about half drunk on it, on Sunday?

A. No, sir, he may have got the whiskey, I do not think he was drunk, and I did not see him drinking.

Q. 81. I will ask you if your crowd was not drinking whiskey while you were up there?

A. They might have been drinking some of this they got from him that day.

Q. 82. Now, Mr. Center, on all the rounds you have gone over here to Mr. Miller, you could not find any damage at all to trees, crops, or any other kind of vegetation?

A. Not by smoke, no sir.

Q. 83. Do you remember seeing a man named Winthrop up there?

763 A. Yes, sir.

Q. 84. Did you talk with him?

A. Yes sir.

Q. 85. Did you talk with him?

A. Yes, sir I stayed all night with him.

Q. 86. I will ask you if he did not point out damage to you?

A. No, sir, he did not point out any. He pointed out some damages to his orchard, and I went all over it talking to him one Sunday morning, and the parties that were with us, talked to him about it. He lived in Kentucky, he had some trees, and he said he had some black bark and some kind of bore worm, and we explained to him that that was what was killing his trees.

Q. 87. And old man Winthrow agreed with your men that it was not the smoke?

A. Yes, sir.

Q. 88. Which one of the Winthrows was that, W. J. or J. W.?

A. I do not remember which one it was, an old like man.

Q. 89. Where does he live?

A. I do not remember what street he lives on, it seems to me north of Ellijay somewhere, on the creek.

Q. 90. I will ask you if he did not live out on Mountain Town Creek?

A. I believe he did. I would not be positive. I am not acquainted with the streams well enough for that.

Q. 91. What time of the year were you out there on that trip, your party?

A. I am not positive, I believe it was in September.

Q. 92. Don't you know it was in October and November, after frost?

A. No, sir, I think it was along the last part of September, but I am not positive about those dates.

Q. 93. Don't you know at the time you were there frost had already fallen and killed a big part of the leaves?

764 A. I won't say, it may have. I won't say that it did or did not.

Q. 94. Did not you swear on a previous examination about this same matter, that frost had fallen and killed the leaves?

A. I do not know sir that I did. I may have. I do not think that I did.

Q. 95. In the case of Shippin Brother- and Company against the Ducktown Company, you say you do not know how that was?

A. How is that?

Q. 96. What was your answer to that question?

A. About that frost. I am not positive. I believe they had frost positively while we were out, or before, something near that.

Q. 97. Was it before?

A. Yes, sir, possible frost had fallen. I won't say positively, but I believe there was.

Q. 98. In the other case of Shippin Brothers Company against the copper company, did you not swear that you did not know much about sulphur smoke damages?

A. No, sir.

Q. 99. And that you could not tell it when you saw it?

A. No, sir.

Q. 100. You did not swear that?
A. No, sir.
Q. 101. You can tell it then?
A. Yes, sir.
Q. 102. And if there had been any damage over there on this trip you could have seen it and known it?
A. Yes, sir, I think I would.
Q. 103. I will ask you Mr. Center, if there was not a great deal of dead timber all through the forest from the time you entered Georgia, clear down as far as you went?
A. Yes, sir.
765 Q. 104. And practically all the timber, big timber was not entirely killed or partly dead?
A. No, sir.
Q. 105. Especially such varieties as oak and hickory?
A. No, sir, I could not tell. There was chestnut and oak timber that was dead more than any other timber we saw.
Q. 106. How about the hickory, had not that all been killed?
A. I do not know as I seen very little of it. I did not see much hickory timber of any kind.
Q. 107. Did you visit a man named J. Y. Allen, and inspect his crop at Blue Ridge, in Fannin County, Georgia?
A. Corn crop?
Q. 108. Yes?
A. Yes, sir.
Q. 109. Did you make a report on it?
A. Yes, sir.
Q. 110. And swear to the condition of the crop in the case of Shippin Brothers?
A. Did I make the report on it?
Q. 111. Yes.
A. I am not positive, but that I did.
Q. 112. You swore to it in the case of Shippin Brothers?
A. He had a mighty good crop of corn, I know, I do not know whether I made the report, but I know that.
Q. 113. How many bushels of corn to an acre would he made?
A. Just guess at the crop, I guess it would make from twenty-five to thirty bushels per acre, I do not know. I may have been mistaken in the amount to the acres, but it was good corn.

Redirect examination.

By W. B. MILLER, Esq.:

Q. 114. You were asked about hickory timber, what kind of land does hickory timber grown on?
A. Sir?
766 Q. 115. What character of land is hickory timber grown on?
A. I could not say about that, there is very little hickory timber I ever seen scattered. There is no groves of hickory that I have ever seen in my life.

Q. 116. Did you ever see forests where there was not a percentage of dead timber?

A. No, sir, I have not.

Q. 117. State whether or not the chestnut oak timber throughout the whole east Tennessee section has been dying during the past few years?

A. It has.

Q. 118. The chestnut oak has what has been the condition of the chestnut oak throughout East Tennessee?

A. During this trip we were inspecting all down in Pickens County. The most dead timber through there I have seen anywhere.

Q. 119. That was how far away from the Ducktown section?

Mr. DRAKE: I except to that because irrelevant and incompetent. Objection overruled, and appeal prayed and granted.

Q. 120. How far away is that from Ducktown?

A. I could not say exactly, in the neighborhood of sixty miles.

Q. 121. As I understand you have found very much more dead timber down there than up near Ducktown?

A. I have found more there than I have ever seen anywhere in my life.

Q. 122. That was entirely away from the Copper Company?

A. Yes, sir.

Cross-examination.

By J. A. DRAKE:

Q. 123. When you were down there as a party, I will ask you if you did not tell the people generally throughout the
767 country, that you were down there, making out a route for a new railroad?

A. No, sir, I do not think anything about railroad was said. I told them what we were looking for.

Q. 124. Who, on that trip, did you tell that you were looking for smoke damage?

A. I do not know sir. That would be a hard question. I could not tell you any*t*body I talked to about it though, for I do not know.

Q. 125. Did you tell that fellow Jackson that?

A. Who?

Q. 126. Johnson?

A. Yes.

Q. 127. You told Johnson?

A. He knew what we were looking for.

Q. 128. Did you tell Allen, who had that oat crop?

A. No sir, I do not know Mr. Allen. I did not see him.

Q. 129. Did you tell Withrow?

A. Yes, sir, he knew what we were after.

Q. 130. Who else did you tell?

A. I could not tell you, it would be a hard matter to remember every one that we saw, there were several people.

Redirect examination.

By W. B. MILLER, Esq.:

Q. 131. As I understand you, this man Johnson was pretty busy trying to dispense *with* wildcat whiskey, wasn't he?
A. Yes, sir, that is what the boys told me.
Q. 132. Is that the same Johnson Mr. Drake asked you if you saw, the one that was engaged in the whiskey business, selling wildcat whiskey?
A. That is the one, we taken dinner with him.

Mr. DRAKE: And that preacher that you had with you was the one that bought a lot of it?

768 A. I don't know how much he bought, they had some whiskey.

Further deponent saith not.

Sworn to and subscribed before me this 18th day of June, A. D. 1914.

____ ____,
Clerk and Master.

This witness travelled a total of 228 miles, 114 miles in each direction, in coming to the point of taking the deposition and returning to his home.

769 G. C. PARKS, a witness called for the defendant, being first duly sworn, upon examination, deposed:

Direct examination.

By W. B. MILLER, Esq.:

Q. 1. How old are you Mr. Parks?
A. Sixty-two years old.
Q. 2. Where do you live?
A. I live in Monroe County now.
Q. 3. Monroe County, Tennessee, is it?
A. Yes, sir, Monroe County, Tennessee.
Q. 4. Did you live in the Ducktown section of the country at any time, and if so, over what period?
A. Yes, sir, I moved there in 1906, the latter part of 1906, and stayed there four or five years.
Q. 5. Where did you live at that time with respect to the Ducktown Basin?
A. I lived in what is known as Hiwassee, right in the Basin.
Q. 6. That is right in the village, called the Ducktown postoffice?
A. Yes, sir.
Q. 7. And it is about how far from the plant of the Ducktown Company's plant?

A. I suppose it is some mile and a half.

Q. 8. Northward?

A. Rather east,—a little southeast of there.

Q. 9. What business did you follow while you lived there?

A. You mean in Ducktown, or the plant north, I did not get the question.

Q. 10. It does not make any difference, you tell us personally?

A. I lived a little north from Ducktown.

Q. 11. You lived a little north from what do you mean by
770 Ducktown?

A. Well, from the D. S. C. & I. plant.

Q. 12. Well, in the village of Ducktown, did you live north of the Ducktown plant?

A. Yes, sir.

Q. 13. What business did you follow while you were there?

A. I sold goods.

Q. 14. Did you follow sawmilling at any time through that country?

A. I did, in that county.

Q. 15. That is Polk County, Tennessee?

A. Yes, sir.

Q. 16. Did you in that section of the country, before 1906, there around Ducktown?

A. Yes, sir.

Q. 17. Did you travel in and out of the Ducktown Basin before 1906?

A. Yes, sir.

Q. 18. How long have you known that Ducktown section?

A. I have known it as far back as I can recollect.

Q. 19. I believe the Tennessee Copper Company began to operate about 1901, in the spring?

A. Yes, sir, yes.

Q. 20. Were you a member of what is known as the Mayfield Commission?

A. Yes, sir.

Q. 21. What did that commission take its name from?

A. I suppose just Mayfield appointing the people, and appointing them is all I know. He is the man that got it up.

Q. 22. Mayfield is the lawyer that lived at Cleveland?

A. Yes, sir.

Q. 23. When the Tennessee Copper Company was about to blow in its plant, in 1901, did you go out as a member of the commission
arranged by Judge Mayfield, to look at the condition of vege-
771 tation and forestry, in that section.

A. Yes, sir.

Q. 24. What was the object of the Mayfield Commission, what instructions did you get when you went out?

A. Well, my understanding was, and the way we were ordered was to try to ascertain how long the smoke limit reached from the plant.

Q. 25. The plant of the Ducktown Copper Company?

A. Yes, sir.

Q. 26. Was that just before they blew it?

A. Yes, sir, they had a lot of roast heaps at fire, at that time, they had not commenced smelting any.

Q. 27. Who composed that Mayfield Commission?

A. Myself, T. C. Biggs, Bog Rauling, and N. T. Foust, together with Mr. Reese, he was along, that is kinder showing us the locations, and Mr. Renwick went, I believe, went one or two days with us.

Q. 28. That was Mr. S. M. Reese?

A. Yes, sir, Mr. S. M. Reese.

Q. 29. How many days were you engaged in that investigation?

A. I believe, as I remember, four days.

Q. 30. Did you have any other object in view, except to ascertain and report truthfully as to the extent of the damage or smoke affected zone, at that time?

A. No sir.

Q. 31. Did you go in and out of the Ducktown Basin at various points?

A. Yes, sir.

Q. 32. Did you travel completely around the Basin?

A. Yes, sir, we went all around it.

Q. 33. Where did you locate the outside of the smoke zone, the territory that was affected in anywise, by the roasting and smelting operations at that time, with respect to the outer edge of the
772 Ducktown Basin?

A. Well, we went around the Basin, that is, around the foot of the mountains on the north side of what is known as the D. S. C. & I. Company's plant.

Q. 34. Was that town to be on the inside of the Basin?

A. Yes, sir, that is inside the Basin, I mean in the Basin, and on the outside, so far as the Basin went, down between that and the mountain, there is a ledge of mountains, and we went to the edge of the mountain.

Q. 35. How far did you find the smoke zone to extend away from the plant?

A. Well, it had gone along out next to the foot of the mountains in some places, and I suppose from the plant some two miles, and possibly a little further in some places.

Q. 36. How far did it extend from the plant southward, towards the Georgia line?

A. From that plant?

Q. 37. From the Ducktown plant, that is before the other one was put into operation?

A. Well, I just do not know exactly how far it would be. There was a lot of smoke seen on top of the ridge just south of where the Tennessee Copper Company's plant is now, south of the river there, I suppose it might be something like two miles from there, I do not know whether it was two miles through there or not from the plant.

Q. 38. Two miles from the Ducktown Company's plant?

A. Yes, sir, I do not know whether it would be that or not.

Q. 39. Now, when the Tennessee Copper Company's plant was put into operation, what was the effect on that smoke zone, did it increase or decrease?

A. It increased.

Q. 40. Was that increase great or small?

A. It was pretty great.

773 Q. 41. Do you remember a blowing in of the tall stack of the Tennessee Copper Company's?

A. Yes, sir, but I do not know just when it was now.

Q. 42. And how high was the stack, the one they operated, from 1909 until they put up the tall stack,—put it in blast?

A I do not know.

Q. 43. Was it anything like as tall as the one they have used since?

A. Oh, no.

Q. 44. Well, when they put the tall stack into operation, did or not the smoke zone again increase, and if so, to what extent?

A. Well, it was considerably extended, it went away on then.

Q. 45. Do you remember about the time the two companies began to operate their sulphuric acid plants, I do not mean the years, but do you remember the circumstances? I mean, the building of those plants?

A. When it was?

Q. 46. Yes, give it in years if you can, but tell us first if they actually had any plants in operation, acid plants?

A. Well, yes.

Q. 47. Now, do you know about when they were placed in operation?

A. No, I could not tell you just exactly.

Q. 48. Since they have been put into operation, what has been the effect on vegetation and forestry and crops in the Ducktown section, and the sections of Georgia and Tennessee, adjacent to the Ducktown basin?

A. Well, so far as I have seen, it seems to not affect the crops to amount to anything, but while I lived there in the Basin, it was after they had the plant up, and I made good truck there, at Ducktown.

Q. 49. After these acid plants were put into operation, did

774 you plant an orchard?

A. I set out some fruit trees, yes, sir.

Q. 50. In recent years, have you been back to Ducktown and inspected those trees, which were then planted, those fruit trees?

A. Yes, sir, I was there this last season, this last summer.

Q. 51. What did you find?

A. I found some fine looking peach trees, and they had peaches on them.

Q. 52. Were they being affected by smoke or smelting operations that you could tell?

A. They did not look like they had been affected by anything.

Q. 53. What character of peaches were growing on them, what quality?

A. Mighty nice peaches, all through the Basin there, that is all through that town, there was a fine chance for peaches.

Q. 54. That was in what you call Hiawasse, or Ducktown post-office?

A. Yes, sir.

Q. 55. State whether or not there were peaches growing in various yards and gardens, near Ducktown?

A. How is that?

Q. 56. More than one person had peaches growing in Ducktown?

A. Yes, sir, plenty of them.

Q. 57. Did you inspect any of the gardens, of people in Ducktown?

A. Yes, sir.

Q. 58. What did you find as to those, and their condition last year?

775 A. Well, they were good, seemed to be.

Q. 59. What were the kind of vegetables that were being grown in them?

A. Well, they grow grain, corn, beans, cabbage, tomatoes and potatoes.

Q. 60. Such as people generally grow in a little village of that kind through the country?

A. Yes, sir.

Q. 61. Sir?

A. Yes, sir.

Q. 62. What quality?

A. Quality, what do you mean?

Q. 63. Quality, yes, were they good, bad, or indifferent or what?

A. They were good so far as I seen. My son-in-law lives up there, and I stayed up there two or three or four or five weeks, and they had fine stuff. I did not see the other gatherings out of their garden, or truck patches, but it looked nice and good.

Q. 64. Did you hold any official position in that county while you lived there?

A. Yes, sir.

Q. 65. What was it?

A. Well, I served as justice of the peace twenty-two years, and was chairman of the county court three years.

Q. 66. That is probate judge?

A. Yes, sir.

Q. 67. While you lived in that vicinity, did you become acquainted with the character of damage that was done by the smelting operations, when the fumes would be turned loose, and drift over on the gardens and trees? Do you know how they would look, and how it affected them?

A. Yes, sir.

776 Q. 68. Do you know that kind of damage when you see it?

A. Well, I have a pretty good idea about it.

Q. 69. Did you go down into the North Georgia section of the country, during the years 1912 and '13, to ascertain if that North Georgia territory that lies immediately south of the Ducktown Basin, was being affected by the smelting operations?

A. Yes, sir.

Q. 70. What did you find down through there, tell us in a general way?

A. Well, I did not find anything in there that I knew for sure had been affected with smoke. There were a few dead trees once in a while, but you find them to some extent everywhere you go. I saw no sign on the foliage or anything like that.

Q. 61. How many days did you spend down there in 1912?

A. Eight, I believe.

Q. 72. How many in 1913?

A. I do not remember just exactly.

Q. 73. Well, several days, or a few?

A. Well, it was not as much as two or three days or four, maybe the last time.

Q. 74. Were you provided with horses when you went down each trip?

A. The last time yes, they took horses out for us the first trip, yes, sir, we rode both times.

Q. 75. Were you a member of the party that camped on Jacks River, and pitched a camp there?

A. Close to the river, yes, sir.

Q. 76. Did you go from the Copper Company's plant, or Ducktown postoffice down there?

A. I went from the Ducktown postoffice.

Q. 77. In going down to this Jacks River section, and while you were down there, did you or not, pass back and forth through
777 the woods, and along through the fields, in that section of the country?

A. Yes, sir.

Q. 78. Did you make such an examination of that territory that lies adjacent to the Ducktown Basin, as would enable you to ascertain whether any substantial damage was being done there at that time, by the smelting of ores?

A. Yes, sir. I do not think there was any being done at that time. They had mightly fine fruit in there, up pretty close, in fact, I never saw a finer place hardly.

Q. 69. Did you or your party secure any apples or vegetables, or corn for your use, and for the use of your stock over on Jacks River?

A. Yes, sir.

Q. 70. Where did you draw your supplies from while your camp was pitched there?

A. Well, we took some of the stock from Ducktown over there, and we bought from the citizens there, apples and feed for the stock, and I was on one Mr. Allen's place, and bought a good deal of stuff from one of the Allens.

Q. 71. How far is the Jacks River section from Copperhill, the place where you pitched your camp?

A. Well, it is just guess work with me, I suppose it would be ten or eleven miles.

Q. 72. Did you go over the territory that lies between there and Copperhill, so as to enable you to tell if there was any damage being done by smoke?

A. Well, we went over it considerable.

Q. 73. That was your business?

A. Yes, sir, we travelled every day in and out of the locality,—in a different locality.

Q. 74. Have you since that time visited any section of
778 East Tennessee, a further distance from the smelting operations than the North Georgia section, with a view of ascertaining as to the death rate of timber?

A. Yes, sir.

Q. 75. What sections of Eastern Tennessee have you visited?

A. Up on the Cumberland Mountain, up Emory River, from Harriman, and all around over that country.

Q. 76. Do you remember the counties?

A. Well, I have a note of several of them.

Q. 77. Where is your note?

A. Now, it is in the valise in the room there.

Q. 78. Suppose you get it 'Squire?

(The witness goes to the other room for his memoranda.)

Mr. DRAKE: Note an exception for all of the evidence of this witness, relating to the conditions around Ducktown, prior to 1906, as being irrelevant and incompetent.

Q. 79. 'Squire, can you tell us what counties of Tennessee you were in recently, with a view of ascertaining as to the death rate of timber?

A. Well, I had a list of them, but I have lost sight of it now, in some way. I can tell you the territory, I can tell you some of the counties. We went up Emory River, from Harriman, quite a ways, sixty or seventy-five miles, and come back down, and went up there on the train, and come back down afoot, looking at the timber, down Emory River. I forget what county that was in up there.

Q. 80. Do you know whether it was in Scott or Morgan County?

A. We were in Scott and Morgan too.

Q. 81. And Fentress?

A. And Fentress too, we were in seven or eight counties.

779 Q. 82. Cumberland County?

A. Cumberland County.

Q. 83. Do you know whether you were in Bledsoe, or not?

A. No, I do not know about Bledsoe.

Q. 84. Overton or Putnam?

A. We were in Putnam.

Q. 85. Well, when did you travel over that tier of counties?

A. Yes, sir, we travelled over it.

Q. 86. What did you find as to the timber death rate in those counties, embraced in those counties you have mentioned?

Mr. DRAKE: We except to that question, as being irrelevant and incompetent.

Exception overruled and appeal taken.

The WITNESS: Do you want me to answer?

Mr. MILLER: Yes.

A. In places, for instances, up Emory River, we went up there during the,—I had the name of the station in my mind just a minute ago, we went up to a little station, and walked back down, there were three tunnels in the road, and we came through them tunnels as we came back. That is a white pine country up there, to a great extent, and pretty good, looked like it had been pretty good timber, but it was nearly all dead. I have never been anywhere hardly that there was as much dead timber as up that river. I do not know why.

Q. 87. Did you go to Monterey while you were out?

A. Yes, sir, we stayed there two or three nights. I do not know what county that is in.

Q. 88. That is in Putnam County, Tennessee.

A. Well.

Q. 89. And what did you find as to the timber and death rate of it, in the Monterey section?

780 A. Lots of dead timber there.

Q. 90. How many days were you out on this trip, through Putnam and Overton Counties, Scott and Fentress Counties in that section?

A. We were four or five days all told, in there, I do not know just how long we spent. We stayed two nights at Monterey, and then we would go out in the day on the mountain sides, and on the mountains away from there.

Q. 91. What did you find to be the death rate of timber, in that section as compared with that down in North Georgia, in the years 1912 and '13?

A. Well, it was greater than it was in Georgia, except right close here to the Tennessee Copper Company's work there. Of course the smoke goes right over the river there, and kills nearly everything for a little piece, right close.

Q. 92. What do you mean by "right close", how far away from the Tennessee Company's plant?

A. Some close, oh, maybe a half mile to a mile.

Q. 93. Well, after you got as far as a half mile to a mile away from the Tennessee Company's plant, southward, what was the condition of the timber, as compared to hundreds of miles further away in Fentress, and Putnam and Scott counties?

A. Well, there was a heap more dead in timber over there than down near in Georgia, after we got away from right close to the plant.

Cross-examination.

By J. A. DRAKE, Esq.:

Q. 94. Mr. Parks, how many times have you been a witness for this company?

A. I do not know.
Q. 95. Well, approximate it, about how many times?
A. Well, I could not tell you.
Q. 96. How long have you been in their employ?
781 A. I made my first trip for them in,—May 1901.
Q. 97. Have you been working for them since then?
A. From time to time.
Q. 98. How many times have you made trips for them?
A. Well, I could not tell you that.
Q. 99. Have you been a witness more than a dozen times for them?
A. Well, that is for both companies, they both have suits in court, I do not know which I would be summoned for, I do not know whether it would be one or the other.
Q. 100. Are you any expert on timber, or diseases of timber?
A. No, sir.
Q. 101. Are you an expert on bugs and insects and other things that effect timber?
A. No, sir, I could not say that I was.
Q. 102. Who sent you down into Fentress County, Tennessee, to look at the forests down there?
A. Why, I guess the D. S. C. & I. Company.
Q. 103. When was that?
A. That has not been so terribly long ago, it was not long,——
Q. 104. When?
A. I could not tell you just the month it was, or the date it was, it was back in the fore part of the summer.
Q. 105. Of this year? And you cannot remember where you went to?
A. Where I went?
Q. 106. You cannot remember the counties you were in?
A. I was a stranger to all of them, and I did not put them down. I had never been in those counties before.
Q. 107. Why did they send you to Fentress County, Tennessee?
A. I never asked.
Q. 108. Who was with you?
782 A. Three or four or five fellows.
Q. 100. Who were they?
A. Mr. Sherman Reese.
Q. 101. Just name them?
A. M. T. Foust.
Q. 102. R. A. Shiflett?
A. Mr. Shiflett, and one Mr. Miller at Athens.
Mr. MILLER: J. A. Miller?
A. Yes, J. A. Miller, I do not know whether that is his initials or not.
Q. 103. Were you with the crowd that went over to Georgia last year, that camping party?
A. That camping party, last year and the year before? I was with the crowd the year before, I was not there last year.
Q. 104. You were not there in 1913?

A. I was not there, no, I do not believe I was there in 1913. I believe it was 1912. Well, I might have been. I did not camp over there at least.

Q. 105. Were not you with a party that went to J. Y. Allen's?

A. J. Y. Allen.

Q. 106. At Blue Ridge, where you got some feed and stuff, didn't you say you got some feed from a man down there named Allen?

A. Not at Blue Ridge.

Q. 107. Don't you remember that?

A. Not at Blue Ridge.

Q. 108. Anyway, he had some corn down there, didn't he use to live at Blue Ridge?

A. If he did, I did not know it. We went by a man by the name of Allen, who lived in what we called Hell's Hollow.

Q. 109. In Hells Hellow, when was it you were there?

A. That was two years ago, that was in,——

Q. 110. Now, to refresh you, Mr. Parks, was not that last year, and were not you a witness in the Shippin Brothers case
783 against these same people, and testified about Mr. J. Y. Allen's crop, and described it, and so forth?

A. Not last year.

Q. 111. In 1913?

A. No, sir.

Q. 112. In 1912, then, it was?

A. Well, that is what I said a while ago.

Q. 113. Well, I just wanted to know. I did not think you had stated positively which year; you went down in Fentress County and In Monterey, looking for dead timber?

A. Looking to see the condition the timber was in.

Q. 115. Well, you went over in North Georgia, you went looking to find if there was any dead timber, and you could not find much?

A. I was looking to see the conditions there.

Q. 116. You could not find much dead timber in North Georgia?

A. In some places.

Q. 117. It was not as bad down in Fentress County?

A. Not that we could see from the mountains.

Q. 118. You do not know what killed that timber around in Fentress County, you say?

A. No, sir.

Q. 119. And do you know what killed it off in the Ducktown section?

A. No, sir.

Q. 120. Do you know anything about the effect of smoke damage, and its effect on vegetation?

A. I think I know smoke.

Q. 121. Please describe the effect it would have on the leaves of the trees?

A. It turns them brown.

Q. 122. How long after it strikes them?

784 A. I cannot tell.

Q. 123. How soon?

A. Well, I have been going through the woods and seen lots of brown leaves. I do not know how long it had been brown before I got there.

Q. 124. You are not an expert enough to tell how long it takes smoke to affect it that way?

A. No, sir.

Q. 125. What affect will it have on the leaf of a tree, for instance?

A. What do you mean?

Q. 126. How long will it take it to kill the leaves?

A. I do not know sir, I cannot tell you that.

Q. 127. When, and what affact will it have with respect to making the leaves fall off.

A. It turns them brown and makes them fall off sometimes.

Q. 128. I will ask you if it does not have very much the same effect as a frost does?

A. Sometimes, I suppose.

Q. 129. Something like a frost.

A. Yes, sir.

Q. 130. It is easily to observe when the leaves have been damaged, is it?

A. I cannot tell them when it has been damaged, whether it was damaged by smoke or frost.

Q. 131. You cannot tell that?

A. No, sir.

Q. 132. You can tell it is one or the other?

A. Or it might be something else, anything that kills timber or leaves, will turn them brown.

Q. 133. Now, the time that you went up in North Georgia, did you observe any damage to the leaves on the trees?

785 A. I might have seen some.

Q. 134. Well, did you?

A. I don't know as I seen any on that trip that I recollect, but I have been there more than one trip.

Q. 135. I am speaking of that trip?

A. That trip?

Q. 136. Yes.

A. Well, I do not recollect. I may have seen some brown leaves, I do not think I did. I do not recollect any on that trip.

Q. 137. Well, how far did you go on that trip?

A. I went,——

Q. 138. And whereabouts?

A. I went by Pierceville, and took the road and went to the camp in about ten or twelve miles from there.

Q. 139. Where did you go from there?

A. Oh, out a day's ride from there, and out in some other section. We had a pilot.

Q. 140. You came back to the camp every night?

A. We came back to the camp every night, yes, sir.

Q. 141. Did you go over to Ellijay with them on that trip, or over towards Ellijay?

A. No, sir.

Q. 142. You were inspecting Mr. Vestal's timber?

A. Yes, sir, but we never went to Ellijay on that trip.

Q. 143. I did not mean Ellijay, but you were inspecting a Mr. Vestal's timber on that trip, and I asked you if you did not inspect Mr. Vestal's timber that lay down toward Ellijay, in Gilmer County, Georgia?

A. I do not know where his timber is, only what I was told, we had a pilot.

Q. 144. You were there to inspect it?

A. Yes, sir, we had a man who said this was about it, and I just took his word for it.

786 Q. 145. Who was the man that told you you were there to inspect that Vestal timber?

A. I was there to inspect?

Q. 146. Yes?

A. I had a pilot, I say, that told us when we got on his property.

Q. 147. Who was he?

A. We had two really, one named Higdon, and one named Watson.

Q. 148. Well, didn't you make two trips that year?

A. Not over there.

Q. 149. Well, further in that country, I mean over there into Georgia.

A. Oh, I might, I do not remember.

Q. 150. I will ask you if, at the time you were over there if there had not a big frost fallen, and did not a frost fall while you were over there?

A. Not enough to turn the leaves brown, there was a little frost on the fences and around camp.

Q. 151. The night you were up at Mountain Town, you were there I believe, didn't there a good frost come that night?

A. I was where?

Q. 152. At Mountain Town, over there in Georgia?

A. I do not remember, I don't remember.

Q. 153. You cannot remember?

A. No, I do not remember being in Mountain Town.

Q. 154. What time of year was it you were up there?

A. We were up there along in the,—I was out in that section two different times, and I went different places, I did not go back there the second time.

Q. 155. Were you in that crowd, a member of that same crowd, that claimed to the people over there that you were over there viewing out a railroad route for a new railroad?

A. I never heard any such talk as that.

787 Q. 156. Did you tell the people what you were there for, trying to get them to help you find the damage?

A. I think not.

Q. 157. I will ask you if in the Shippin case, you did not swear that you did not know much about smoke damage?

A. In what case?

Q. 158. The Shippin Brothers' case, against this Ducktown Company?

A. That I did not know much about smoke damage.

Q. 159. Much about smoke damage?

A. I may have sworn, like I swear now, I am no expert.

Q. 160. Did you swear what I asked you?

A. I do not recollect.

Q. 161. Did you swear in that case that you did not know smoke damage when you saw it?

A. I think not.

Q. 162. Do you know smoke damage when you see it?

A. I know what I think is smoke damage.

Q. 163. Can you tell it from frost damage?

A. Yes, when I see it—a dead tree. Frost hardly ever kills a tree, it don't kill a tree, but when I see a dead tree I know it is smoke damage.

Q. 164. You know when you see it damaged that it is frost damage or smoke damage, don't you know what I mean by this question?

A. I do not know where you are trying to reach to. I know frost will turn leaves brown, and the leaves will fall to the ground, and they will do the same with smoke.

Q. 165. I understand you, sir, you have to wait until you see the tree, see whether the tree dies, before you know it is smoke damage, that is all the way you can tell, that is what you mean?

A. Yes, sir, that is about all the difference, unless it is in the summer time, if it is summer then there has been no frost and when I see brown leaves, I know the smoke is around but if it is in
788 the fall, it is pretty hard to tell.

Q. 167. Didn't you make an affidavit in the original suit of the State of Georgia against these companies?

A. How did you ask that question?

(Question read).

A. I do not know nothing about what you mean by the original suit.

Q. 168. I mean the case in the supreme court of the United States, of this State of Georgia against these—against the Tennessee Copper Company, and the Ducktown Sulphur, Copper and Iron Company, Ltd., in which the State of Georgia sought to close them down in 1906 and '07, along about then, did not you make an affidavit?

A. I do not remember.

Q. 169. Is there any other G. C. Parks that lives in that section of the country?

A. None that I know of.

Q. 170. Did one live there at that time?

A. No, sir, not that I know of.

Q. 171. And if G. C. Parks did make an affidavit in that case, I will ask you if it would not be you, relative to that smoke damage.

A. I suppose it was.

Q. 172. You had been at that time working for that company as you have already said?

A. When?

Q. 173. In 1906?
A. Which company do you men?
Q. 174. You began in 1901, I believe?
A. Which company do you mean?
Q. 175. Either one or both?
A. Yes, I had been working for them.

Q. 176. Did not you make an affidavit in that case and
789 state there was practically no damage being done? And especially in the State of Georgia, by either one of these companies?
A. I do not recollect.
Q. 177. At that time?
A. I do not recollect.
Q. 178. You say you cannot answer that?
A. I said I did not recollect that I made that.
Q. 179. Your recollection is very bad, isn't it?
A. No, six or eight years, or ten, it might get so I could not remember.
Q. 180. It is bad in the last few months, you cannot remember where you went to over there in Tennessee?
A. I do not know, I do not know the names of the counties, I can tell you where I was.
Q. 181. I will ask you, if to the best of your recollection, you did not make an affidavit in that case?
A. I told you I did not recollect.
Q. 182. Didn't you make any report on that fellow Allen's corn, about how much he would make per acre.
A. I think not.
Q. 183. Did you swear how much it would make?
A. I do not recollect that I did.
Q. 184. Would the case of Shippin Brothers and Company, I am asking about, against the D. S. C. & I. Company, didn't you swear what you thought that corn would make?
A. I do not recollect that I did. He had good corn there, and we got corn to feed on, but I do not recollect that I swore anything like that, in fact, I did not go into his field to see his corn.
Q. 185. Did you see Mr. J. W. Withrow on that trip, down in Georgia?
A. J. W. Winthrow?
Q. 185. Yes, J. W. Withrow, up there about Mountain Town, you know where Mountain Town is, don't you?

790 A. No, sir.

Q. 187. You remember going to Ellijay and making a trip out north of there?
A. North of Ellijay?
Q. 188. Yes, went out north of Ellijay?
A. Yes, I reckon it was north.
Q. 189. On that trip, didn't you see a man named J. W. Withrow, and talk with him, and did he not try to point out to you, to your party, smoke damage?
A. J. W. Withrow.

Q. 190. In his orchard, or did anyone up there point out smoke damage to you in an orchard, to your party?

A. I do not remember if he did,—I do not recollect. There might have been somebody that done it.

Q. 191. Well, if you can state positively, please state whether anybody pointed out damage to you on that trip?

A. I cannot state positively that anyone did.

Q. 192. Did you talk to any citizens up there and try to ascertain if they had any damage to their crops and trees?

A. I guess I did, but I do not recollect who it was.

Q. 193. You cannot remember then, anything that occurred on that trip only this general way that you speak of?

A. I can recollect that.

Q. 194. Except that there was no dead trees up there?

A. How?

Q. 195. You can remember there were no dead trees up there?

A. I did not say there were no dead trees up there, I did not see a great many up there.

Q. 195. At A-1, do you know where that is in Georgia?

A. No, sir, I do not think I do.

Q. 197. I will ask you if you did not take dinner at A-1 with a man named Johnson?

A. A-1?

791 Q. 198. Don't you remember taking dinner there, your party, with a fellow named Johnson?

A. I remember taking dinner there, I do not remember his name.

Q. 199. Do you not remember his pointing out damage to your party, of smoke all around in the distance?

A. I do not think so. I remember of,—the one I am thinking of eating dinner with over there, he had a fine field of corn and fed the horses.

Q. 200. A good field of corn?

A. Yes, sir, we got corn from him and fed the horses. I do not remember his name, but he had a postoffice.

Q. 201. I believe you stated a while ago in answer to Mr. Miller that the damage across the Georgia state line, near to the Tennessee Copper Company, a few miles away, was very bad, and all the timber I believe you said, was killed, that is true, isn't it?

A. Not all of it, but a big majority of it was.

Q. 202. I will ask you if the hills facing the Copper plant in the state of Georgia, are not denuded of timber, of any size for miles back there?

A. Well, there is patches that there is some timber, and then there are places that there is none.

Q. 203. I will ask you, Mr. Parks, if the shape of the mountains and hills does not have a good deal to do with the effect the smoke will have on the timber?

A. Well, if the timber is down in a hole, and it had to go through the mountains to get to the timber, it would make some impression, but there is no big mountains right close there on that side.

Q. 204. Don't you know that a hill facing these plants, the effect

if the smoke is worse than it is in a hole, or back of the mountains, away from the plant?

A. Well, that is reasonable to suppose that. Also I never
792 saw a finer lot of timber than there is facing the Isabella plant. Right there facing it, on the side next to it.

Q. 205. Please answer my question. Isn't it under the conditions as I have stated, on the hills that are facing these plants, the trees are all gone, anywhere near them, and on the opposite side of the mountain from the plant, you will find timber?

A. I will not say they are all gone, but in places they are pretty near all gone. There *is* a tree standing right across from the Tennessee Copper Company's plant, when I was there, and I went over and inspected it. I do not know why it was not killed, but it was not killed.

Q. 206. I want you to answer that general question, Mr. Parks?

A. Well?

Q. 207. Will you state yes or no*t*, does the smoke affect the timber on the hills facing the copper plant, more than it does on the opposite side of the hills or mountains?

A. Yes, sir, I will answer that. It does more, but I do not think it kills everything on that side like you asked it before.

Q. 208. You stayed there in the little town of Ducktown postoffice, and last year, you saw peaches growing, I will ask you if there is not a hill or mountain in an air course between that and the Ducktown Copper Company?

A. A mighty small one. There is a ridge right close there.

Q. 209. Right back of the town isn't it?

A. How?

Q. 210. Right between the town and the plant—a great big hill.

A. The road goes right down the hollow and passes over it, it does not go over the hill, but then there is a hill there.

Q. 211. Is your son-in-law or son I believe you said, up there.
793 A. Son-in-law.

Q. Was he working for the copper company?

A. He was not working then for them. I do not know he may be now.

Q. 213. Pretty nearly everybody that lives in there, in and around Copper Hill and Ducktown and Isabella, work for those companies, do they not?

A. Well, a few of them do, and some do not.

Q. 214. I mean, is not every industry in there dependent on these copper companies for a living.

A. Well, practically so, yes.

Q. 215. Was this party that went to Fentress County, Tennessee with you, a part of the same crowd there were over there in Georgia with you?

A. Part of them might have been sir.

Q. 216. Were all of them, or just a part? How was that?

A. Just a part of them.

Q. 217. Was Mr. Reese and Hyatt, who were with you on that

inspection tour, around the plant, the same gentlemen who are here today as witnesses?

A. Do you mean in May 1901?

Q. 218. Yes, around the plant there inspecting this property?

A. Yes, sir, Mr. Hyatt did not go but one or two days, Mr. Reese went with us.

Redirect examination.

By Mr. W. B. MILLER, Esq.:

Q. 219. We could not very well show the conditions down there without calling the witnesses, that is the only way we could get that?

A. I think it is.

Q. 220. Now, you were asked about who is dependent on the copper companies for support; I will ask you whether or not practically that entire North Georgia section that is adjacent
794 to the Ducktown Basin is also dependent on the copper companies for a market for their timber?

A. Yes, sir.

Mr. DRAKE: I except to the question as being irrelevant, immaterial and incompetent.

Exception overruled and appeal taken.

Q. 221. State what these North Georgia people generally do with their crops, their garden and products and fruit, where do they sell it, market it usually?

A. Well, at Ducktown, so far as I know.

Mr. DRAKE: We except to the question as being irrelevant, immaterial and incompetent.

Exception overruled, and appeal taken.

Q. 222. Do they or not peddle it out over the country, over the Ducktown section?

A. Yes, sir, I have bought lots of it from them while I lived there.

Q. 223. What is the prevailing wind during the growing season Squire, in the Ducktown Basin, from what direction do the winds generally come?

A. In the summertime you mean?

Q. 224. Yes.

Mr. DRAKE: I except to the question as original evidence, and it should have been asked in chief, and not in rebuttal to anything that has been asked.

Exception overruled, and appeal taken.

A. Principally from the south.

Q. 225. Now, if it be blowing from the south by Isabella or Ducktown Company's plant, state whether or not that would drive the

smoke right up the hollow to the village of Ducktown, about which Mr. Drake asked you on cross examination?

A. It would.

Q. 226. And what would be the effect on gardens and fruit up in the village of Ducktown if there is any smoke of conse-
795 quence escaping from the plant?

A. It would have killed them the same as anybody's.

Q. 227. You do not know of any reason why it should have been left and the smoke travelled down into North Georgia and done damage?

A. No, sir.

Q. 228. What was that you said on cross examination about that pine body of timber, facing the smelter of the Ducktown Copper Company?

A. It was on Pack Mountain, two miles or two and a half miles from the Ducktown Copper Company's plant, right on the base of the mountain, up from the smelter.

Q. 229. Keeping the smelter stack in operation generally?

A. Yes, sir.

Q. 230. Is that on the inside of the Basin?

A. Yes, sir.

Q. 231. Now, what character of timber is that you saw?

A. Chestnut and poplar, awfully fine timber.

Q. 232. All of it fine timber?

A. Yes, sir.

Q. 233. Does it seem to be thrifty and healthy?

A. Yes, sir, as fine timber as I ever saw. I cannot understand why it has not been killed, but it has not.

Q. 236. Well, state whether or not in your voyages down through North Georgia, you found the crops in a growing and thrifty condition, and also the fruit, even after the frost had fallen?

A. Yes, sir.

Mr. DRAKE: We except to that question and answer as being original evidence, and should have been asked in chief, and *for* the further ground that it is a conclusion of the witness.

Exception overruled, and appeal taken.

Q. 237. Now, suppose that the smoke, the sulphur fumes
796 had been drifting down there in the season when the crops and orchards were maturing, and would these crops — existed in the healthy condition you found them?

A. I would think not, if there had been anything to affect it.

Mr. DRAKE: We except to that because he has not qualified as any expert, and also has not lain any grounds on which to base an opinion.

Exception overruled, and appeal taken.

Q. 238. You were asked if you knew why you were sent out into Fentress and Scott Counties sections, to look at the timber, not being a smoke expert, I will get you to state whether it requires a

smoke expert to know dead timber in this section of the country when you see it?

A. I think I can tell it, tell dead timber when I see it.

Q. 239. Any ordinary man can do that?

A. Yes, sir.

Q. 240. And you went over that and ascertained as to the relative death rate of timber.

A. Yes, sir, that is the way I understood it.

Q. 241. While you were down on the Jacks River section with headquarters at this camp, did or not your party, work out, riding from that camp in all direction-, while you were there?

A. Well, pretty much, yes.

Q. 242. You would go out in the forest and in the fields?

A. Yes, sir.

Q. 243. You have been asked in cross examination about your working for one or the other of the copper companies, did you ever work for either of them, in any respect, excepting to inspect some timber and report as to the damage?

A. No, sir.

Q. 244. When you were sent out on these inspection trips by either of the companies, were you ever advised as to color
797 your testimony, or make any other report, except a truthful and honest report as to the conditions as you found them?

A. No, sir.

Q. 245. Have you any interest in either of the companies?

A. No, sir.

Q. 246. They have paid you for your time?

A. Yes, sir.

Q. 247. And asked you to report truthfully as to the conditions?

A. Yes, sir.

Mr. DRAKE: We except because leading and suggestive and puts the answer in the mouth of the witness.

Exception overruled, and appeal taken.

Recross-examination.

By J. A. DRAKE, Esq.:

Q. 248. Who owned that fine body of timber you say is facing the plant, in about two miles of it?

A. I could not tell you.

Q. 249. Where is it?

A. Right up on the sides of the mountain, above the Isabella smelter.

Q. 250. Which way?

A. Northwest.

Q. 251. Now why is it, Mr. Parks, that you can remember so definitely everything for the other side, but cannot remember anything that we asked you, any detail, explain that?

A. If you will explain that to me that I have done that, maybe I can answer.

Q. 252. Answer my question if you can.
A. Well, I have answered it.

Further this deponent saith not.

Sworn to before me this 18th day of June A. D. 1914.

_____,
Clerk and Master.

798 The distance travelled by this witness from his home to the point of taking his deposition and returning was a total of 126 miles, 63 miles in each direction.

[End of Vol. I.]